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U.S. ARMY CONCEPT TEAM IN VIETNAM
APO San Francisco 96243

EMPLOYMENT OF AIRMObILE ARVN FORCES IN COUNTERINSURGENCY OPERATIONS (U)

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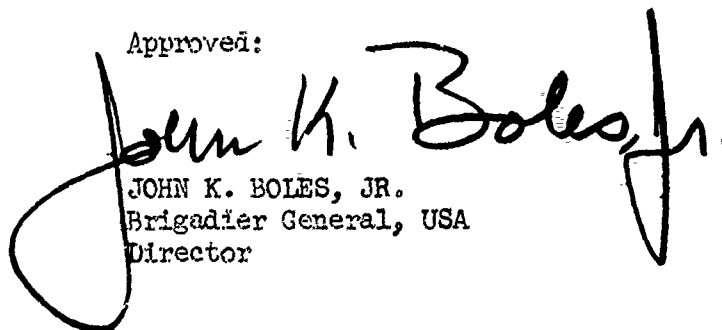
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REPORT EVALUATION BY THE DIRECTOR, JRATA

The report is a valid analysis of the employment of US Army Helicopters operating both independently and in conjunction with Vietnamese ground forces in counterinsurgency operations in Vietnam. The report will be of value primarily to US Army planners. Inasmuch as no comparison was made of US Marine Corps and US Army procedures used in helicopter operations, the relative merits of each cannot be weighed. It must be pointed out that this evaluation was conducted within the framework of a very complex command and control system. The findings and conclusions of this report, therefore, should be interpreted as applicable to the employment of airmobile forces under these or similar restraints which would not necessarily exist in a unilateral US Army operation. The conclusions and recommendations of the report are substantiated by the documentation and are concurred in.

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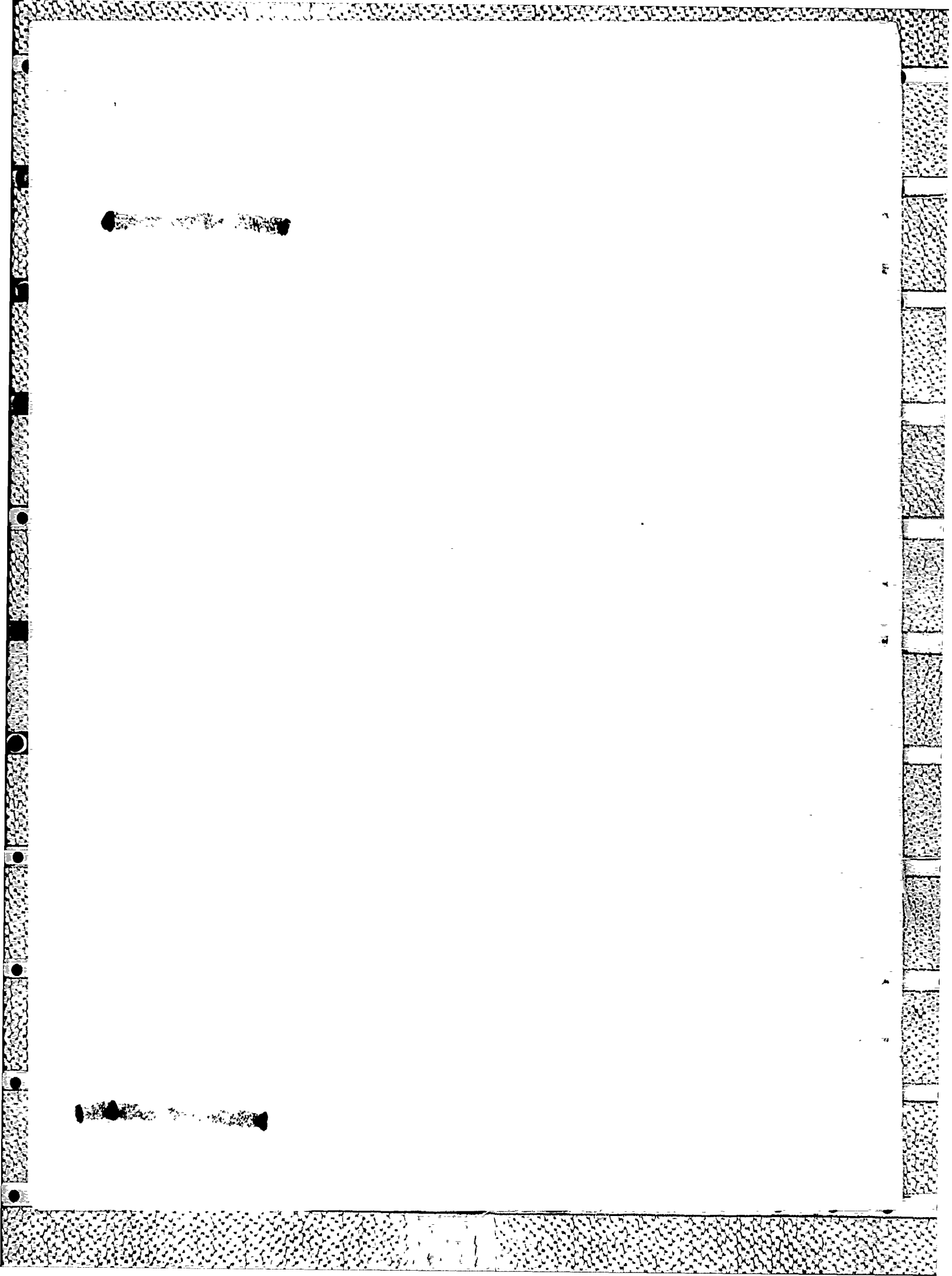


30 March 1966

JOHN K. BOLES, JR.
Brigadier General, USA
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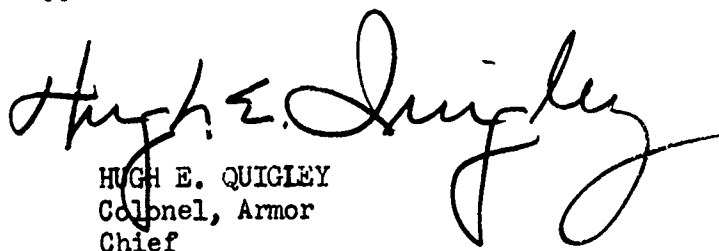
FINAL REPORT

EMPLOYMENT OF
AIRMOBILE ARVN FORCES
IN COUNTERINSURGENCY
OPERATIONS (U)

JRATA Project No. 1C-202.1

9 February 1966

Approved:


HUGH E. QUIGLEY
Colonel, Armor
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I. (C) PREFACE

A. ABSTRACT

This evaluation consists of a detailed examination of Army of the Republic of Vietnam (ARVN) airmobile forces employing US Army helicopters while operating independently and in conjunction with ARVN ground forces in counterinsurgency operations.

Case studies of airmobile operations conducted by the ARVN 9th, 21st, and 22d Divisions were prepared by evaluators who observed all phases of the operations, interviewed key participating personnel, and studied documents pertaining to the operations.

Successful airmobile operations require secrecy in planning, surprise in execution, centralized control of fire support, adequate reserves, judicious choice of landing zones, and adequate command and control during the critical troop debarkation phase.

B. OBJECTIVES AND METHODS

1. Objective 1 - Command and Staff Planning Procedures

Evaluate the command and staff procedures used in planning airmobile operations.

To meet this objective, planning procedures were observed and documented and key participating personnel were consulted. Case studies were prepared and procedures were analyzed.

2. Objective 2 - Organization for Combat

Evaluate the organization for combat of forces conducting airmobile operations,

To meet this objective, operation orders were translated and ARVN staff officers and their US advisors were interviewed. The information was included in case studies and analyzed.

3. Objective 3 - Command and Control Procedures

Evaluate command and control procedures used in conducting airmobile operations.

1. Methods for meeting objective 3 were the same as used in objective

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4. Objective 4 - Tactics, Techniques, and Procedures

Evaluate the tactics, techniques, and procedures used during airmobile operations.

Methods for meeting objective 4 were the same as used in objective 1.

5. Objective 5 - Fire Support Means and Procedures

Evaluate the fire support means and procedures for supporting airmobile operations.

To meet this objective, planning and employment of fire support means were observed and documented and key participating personnel were consulted. The information was documented in case studies and analyzed.

6. Objective 6 - Logistical Support

Evaluate the logistical support procedures employed in airmobile operations.

Methods for meeting objective 6 were the same as those used in objective 1.

C. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Airmobile operations must be planned rapidly and executed with maximum surprise. Standing operating procedures should be used to reduce planning time. Strong airborne reserves should be provided. All means of fire support should be placed under centralized control to insure most efficient use of available support. All troops should be trained in techniques of airmobile operations to permit flexibility. Flight altitude should be chosen to minimize enemy anti-aircraft capability. Troops should be landed no farther than 400 meters from objective and closer if the landing can be screened with smoke. United States advisors, with adequate communications, should ride in the operation command and control helicopter and ground unit commander's helicopter. Fighter aircraft, of a type suitable for close air support, should strike the objective just prior to assault by airmobile troops and should continue supporting fires to limit enemy mobility during the landing and debarkation of airmobile troops.

D. CASE STUDIES

The annexes to this report provide the reader with a general description of the methods and procedures employed by three Vietnamese Infantry divisions in conducting airmobile operations in Vietnam. The contents of the annexes are arranged in the order of evaluation objectives.

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II.(C) INTRODUCTION

A. PURPOSE

The purpose of this evaluation was to examine in detail airmobile forces employing US Army helicopters and operating both independently and in conjunction with Vietnamese ground forces in counterinsurgency operations in Vietnam.

B. BACKGROUND

The employment of airmobile forces by the Army of the Republic of Vietnam began in the late fall of 1961 when US Army transportation companies (light helicopter) were deployed to the Republic of Vietnam (RVN). Use of these US support forces enabled the ARVN commander, by capitalizing on speed and flexibility, to conduct airmobile operations designed to surprise, out-maneuver, fix, and destroy or capture the enemy.

During the early phases of US participation in the war, airmobile operations were few in number and relatively small in size. As the ARVN became more proficient in employing airmobile forces and the US Army airmobile companies increased in number, the frequency and size of operations increased until company and battalion size airmobile operations now are conducted weekly by some divisions. Added to the deliberately planned battalion and company size operations are the numerous operations, commonly referred to as "eagle flights", conducted by heliborne forces.

The employment of airmobile forces has not been restricted to any particular geographical or tactical area in Vietnam. The US Army airmobile companies are so located that each ARVN corps and division commander has the capability of employing an airmobile force anywhere in his area of responsibility.

The ARVN airmobile operations conducted thus far in Vietnam have consisted of joint and combined US and RVN forces. The ground elements committed in these operations were Vietnamese. Helicopter support was provided by US Army aviation companies in the II, III, and IV ARVN Corps while US Army and Marine Corps helicopters supported I Corps airmobile operations. Close air support was provided by the Vietnamese Air Force, US Air Force, and US Navy. The composition of support forces varied with the area of operation and the type of mission.

Prior to the present project, assessment of the capabilities of ground and aviation units to conduct counterinsurgency airmobile operations in Vietnam had been confined to evaluations of particular elements. For

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example, the Army Concept Team in Vietnam (ACTIV) had conducted separate projects on armed helicopters in escort of transport helicopters, the airmobile company, the mechanized rifle troop equipped with armored personnel carriers (M-113), and the employment of artillery in counterinsurgency operations. Now, an examination and documentation in a single evaluation of all aspects of airmobile operations in a counterinsurgency environment has been made.

C. SCOPE

1. Definition of the Project

Airmobile operations were observed, documented, and analyzed. Recommendations pertaining to planning, organization for combat, command and control, tactics and techniques, fire support, and logistics were developed.

2. Setting of the Project

a. Environment

The evaluation was conducted within the II and IV ARVN Corps areas (figure 1), which afforded a variety of terrain features. (See annex E for a detailed description.)

The evaluation took place during the last part of the north-east monsoon (January to March), the spring transition period (March to May), and the first part of the southwest monsoon (May to August), permitting observation and documentation of airmobile operations during various stages of the dry and wet seasons.

b. Military Elements

Airmobile operations conducted by the 21st ARVN Division, IV Corps were documented from 22 January through 24 February 1965 (annex A) and from 14 June through 2 July 1965 (annex D). The 21st Division conducted frequent airmobile operations throughout the lower Mekong delta plain.

Airmobile operations conducted by the 9th ARVN Division, IV Corps were documented from 5 March through 6 April 1965 (annex B). The 9th Division's area of operations included the central Mekong delta plain.

The 22d ARVN Division's (II Corps) airmobile operations were documented from 27 April through 12 June 1965 (annex C). The division's area of operations was in the central lowland region and included both coastal and mountainous environment.

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3. Definition of Terms

- a. Airmobile operation - An operation in which combat forces and their equipment are transported by helicopter to engage in ground combat.
- b. Airmobile force - A force composed of ground combat elements committed with supporting aviation elements which conducts airmobile operations.
- c. Armed helicopter - A UH-1B helicopter equipped with either the M6-E3 armament kit (four M60C 7.62mm machineguns mounted on a limited movement flexible mount and two pods of six or seven 2.75-inch folding fin rockets) or the XM-3 armament system (two pods of twenty-four 2.75-inch folding fin rockets). A limited number of helicopters were equipped with the M-14 armament system (two caliber .50 machineguns).
- d. Armed helicopter fire team - Two armed UH-1B helicopters comprise a light fire team. It is the smallest armed helicopter element employed tactically. A light fire team reinforced by another armed helicopter is termed a heavy fire team.
- e. Armed helicopter platoon - A helicopter platoon organic to the aviation company (airmobile). An armed platoon organized for combat normally consists of two fire teams plus the platoon commander's helicopter.
- f. Airlifted forces - The ground combat element transported by aircraft in an airmobile operation. Also referred to as the heli-lifted or heliborne force.
- g. C&C helicopter - Command and control helicopter. The designation of the helicopter in which the command and control element of an airmobile operation is transported and from which it exercises control over the operation.
- h. Combat youth - Untrained, unpaid government militia who provide hamlet defense.
- i. Departure airfield or staging airfield - The airfield at which the airmobile force is assembled and from which the airmobile operation is initiated.
- j. Eagle operation - A type of airmobile operation employing an independent or rapid-reaction force transported by helicopters.
- k. Eagle force - The heli-lifted force employed in eagle operations.

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l. Eagle flight - The helicopter unit that transports the eagle force.

m. Ground maneuver element - Ground units employed in conjunction with the airmobile force in an airmobile operation.

n. Main force unit - A Viet Cong regular unit, as distinguished from a paramilitary or guerilla unit.

o. Maximum allowable gross weight - The maximum weight of the helicopter including the weight of cargo, passengers, crew, and fuel. The maximum allowable gross weight of the UH-1B helicopter is 8500 pounds. The maximum allowable gross weight of the UH-1D helicopter is 8800 pounds.

p. Pickup point - An LZ without support facilities used for pick-up of airmobile forces.

q. Popular force (PF) - A paramilitary force organized into squads and platoons to conduct offensive and defensive operations within the subsector from which the particular PF unit has been recruited.

r. Regional force (RF) - A paramilitary force organized into companies and battalions to conduct offensive and defensive operations within the sector from which the particular RF units have been recruited.

D. EVALUATION DESIGN

1. Methodology

An analysis of case studies of airmobile operations was selected as the best means of satisfying the objectives.

a. Data Collection Methods

Information for the documentation of airmobile operations was collected by ACTIV evaluators who observed all phases of the operations, interviewed key participating personnel, both US and ARVN, and studied documents pertaining to the operations.

b. Analysis Methods

The analysis was essentially a comparative study of division operations as described in each case study on the basis of objective areas.

2. Limitations and Variables

Observation was limited to the number and type of airmobile operations conducted by the 21st, 9th, and 22d ARVN Divisions during the evaluation.

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3. Support Requirements

Command support was directed by MACV command letter, JRATA serial 4244, 4 December 1964, subject: Evaluation of Employment of Airmobile Forces in Counterinsurgency Operations. Two teams, A and B, each composed of three field grade, two company grade officers, and one enlisted man were provided on TDY for consecutive 105-day periods. Funds to support TDY personnel were provided by the US Army Combat Developments Command, Fort Belvoir, Virginia.

4. Time Schedule

The field evaluation began on 15 January 1965 and continued through 2 July 1965. Team A documented airmobile operations conducted by the 21st and 9th ARVN Divisions from 15 January to 7 April 1965 and team B documented the 22d ARVN Division airmobile operations from 27 April to 12 June 1965. Team B then returned to the 21st Division from 14 June to 2 July 1965, to document airmobile operations in inundated areas.

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III. (C) DISCUSSION

A. OBJECTIVE 1 - COMMAND AND STAFF PLANNING PROCEDURES

Forces available and selected to support the scheme of maneuver are discussed under objective 2, fire support planning under objective 5, and planning for logistical support is presented under objective 6.

1. Intelligence

Planning for airmobile operations was normally initiated following the receipt of information concerning the location of VC units. Occasionally, operations were planned as a show of force or to temporarily deny certain areas to the VC. Most of the deliberately planned operations were based upon intelligence over 24 hours old. To this intelligence lag was added the planning time, which usually caused ARVN to arrive in an operational area several days after VC had been reported there. In many cases there was no contact, since the VC seldom remained in one place for any length of time. Only one of the operations observed was based upon information that was received less than 12 hours before its execution. It is significant that this was one of the most successful of the 16 operations observed and documented.

2. Planning Headquarters

Plans for the 9th, 21st, and 22d Division airmobile operations could and did originate at the various command levels within the division. Plans, however, were submitted to division for approval. Once finalized and approved by division, the plan went to corps for final approval and, following corps approval, the division issued an operations order. Final planning was accomplished at division level because the division had the most experienced personnel for effective coordination of support planning.

Corps approval was required in order to obtain helicopter support since the division did not have aviation units in direct support. The lack of direct support helicopters restricted the division on the number of airmobile operations that could be executed and increased the planning and response time.

It was the opinion of the 21st Division senior advisor, and division staff advisors of the 21st, 9th, and 22d Divisions, some aviation personnel, and ACTIV evaluators that available aviation companies should have been placed in direct support of divisions. The divisions could then have undertaken airmobile operations during the period the aviation companies were available without first obtaining corps approval. This would have permitted the division commanders to have stepped up the

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offensive against the VC by:

- a) Decreasing the planning and reaction time
- b) Lessening the possibility of compromise of an operation since fewer people would be aware of the plan prior to execution
- c) Increasing the number of airmobile operations.

An aviation company as organized during the evaluation could provide an ARVN division with sufficient transport helicopters for most operations. An additional armed platoon, however, was required for many operations and had to be provided from another airmobile company. An alternative which would have been more desirable for adequate support of the division would have been to increase the number of armed helicopters in a company placed in direct support of an ARVN division. In addition, an aviation company should have been provided for general support of the corps. In essence, the aviation support should have been concentrated for a prescribed period of time.

The 22d Division, whose organic units were widely dispersed and committed to priority tasks during the evaluation, was required to use attached airborne and Marine task forces to conduct their operations. These attached units maintained close ties with their parent headquarters and, as a result, the attached task force commanders could appeal the tactical plan when the missions were not to their liking. Differences of this nature had to be resolved at higher headquarters, which invariably delayed the operation.

3. United States Advisor Influence

United States advisors were in a position to influence strongly the planning for airmobile operations, since the division senior advisor recommended approval to the corps senior advisor who approved requests for US Army aviation support. If either advisor did not approve of the plan, he could deny the division the use of US helicopter support. This usually insured early coordination by the ARVN staff with the US advisor staff in the hope that the type of operation envisioned justified the use of airmobile forces.

4. Planning Considerations (ARVN)

a. Types of Operations

Airmobile forces were usually employed in, though not limited to:

- 1) Search and clear operations in areas not easily or rapidly accessible by road

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- 2) Reaction to VC operations
- 3) Blocking role
- 4) Reinforcement or relief role
- 5) Raids to obtain intelligence and destroy specific VC targets
- 6) Securing downed aircraft

b. Influence of Terrain and Enemy

(1) Mekong Delta

The number of helicopters to be employed in an operation depended upon the division's mission, tactics, and helicopter availability. During the first half of the evaluation, most of the operations conducted by the 21st and 9th Divisions of the IV Corps employed 10 or 11 transport helicopters. At the beginning of the evaluation the 21st Division employed lifts of 6 or 7 transport helicopters carrying 48 or 56 men in frequent eagle operations. Against certain targets this proved ideal because it was a small, easily controlled force. As larger targets developed, the division used lifts of 10 helicopters carrying 80 troops, the combat elements of one company. Planning was based upon committing the airmobile forces as 80-man combat elements. Eventually, this became the rule with the 9th Division, as their usual employment was 11 transport helicopters for a lift of 88 men. During the latter part of the evaluation the 21st Division began to use more helicopters in the initial lifts. On two of the operations documented at the start of the rainy season (second half of the evaluation) in the delta (annex D), the 21st Division employed lifts of 20 transport helicopters (160 men).

In both the 9th and 21st Division areas, planning for LZ's posed no problem. Invariably there were large clear paddy areas adjacent to the initial objective and subsequent lifts could easily be landed in the most tactically advantageous area.

(2) Coastal Plain and Highlands

In the 22d Division (annex C), eagle forces always consisted of 36 men and were transported by 6 helicopters. In battalion-size operations, divisions used from 10 to 40 transport helicopters or, at times, as many transports as were available. The division commander's policy was to employ as many troops as possible on a single lift because of the limited numbers of LZ's in the II Corps area and the average turnaround time of 15 minutes. Turnaround time left the first lift vulnerable until the arrival of additional troops.

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c. Influence of Weather

Weather had no significant effect on operations during the evaluation. Thunderstorms posed temporary problems, such as requiring use of alternate flight routes and restricting visibility. On the three operations observed during inclement weather, thunderstorms were only a minor inconvenience. However, in a tactical situation requiring immediate close air support, weather could have seriously affected operations. In planning for the ground maneuver of troops for the three operations during bad weather, it was recognized that the flooded rice fields would impede movement.

5. Plans and Orders (ARVN and US Forces)

Normally, detailed loading and landing plans were not prepared by any of the ARVN divisions evaluated during airmobile operations. Such plans and procedures had been reduced to SOP and were thoroughly understood. The 114th Aviation Company, which supported 9th Division operations, normally prepared a written operations order that included an air movement plan, as did the 52d Aviation Battalion operating with the 22d Division. On the other hand, the 121st Aviation Company, which supported the 21st Division operations, did not issue a written operations order and did not prepare a detailed air movement plan. However, in all units, air movement was well executed.

a. ARVN Tactical Planning and Order

Tactical plans of the 21st Division were sound and uncomplicated and usually were based on the available intelligence. However, the tactical plan for one of the 9th Division operations originating at sector level, was not based on enemy intelligence. All available information, later substantiated during the operation, indicated the presence of a VC force approximately 6 kilometers east of the planned area of operations. The tactical plans for the other operations (documented in annex B) were sound and in all instances were based on available intelligence. Both the 9th and 21st Division plans for those operations evaluated, provided for an airmobile reserve which permitted the commander a degree of flexibility in the conduct of his operations.

Detailed tactical plans were not prepared for the 36-man eagle operations of the 22d Division. Planning was broad in nature and consisted mainly of determining the mission, objectives, and concept of operations. Fire support planning was not undertaken for the one eagle operation evaluated except that planned by the armed helicopters. Although sufficient time was available, most of the planning for the aviation company support was done at the pickup point just prior to the beginning of the operation. In view of the adequacy of unit SOP's and the experience of units involved in eagle operations, the need for detailed planning was minimized.

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Detailed tactical plans were, however, prepared by the 22d Division for all battalion-size airmobile operations. The plans were rigid and were designed for an assault against an enemy who presumably would remain in position and defend ground. The reserves were released or assigned other tasks 2 hours after the final planned heli-lift was completed, without consideration of the situation.

Time permitting, all divisions issued complete written operations orders. In most cases, these were clear, concise, and adequate for the situation. Written orders, though desirable, were susceptible to compromise since they passed through many hands during preparation, reproduction, and dissemination.

Units participating in the 21st Division operations were alerted in sufficient time to prepare for an operation. However, in order to reduce the possibility of compromising an operation, battalion commanders were not informed of their mission or the tactical plan until the operations briefing or until receipt of the operations order. Normally this was not sooner than D minus 1.

Similar procedures were followed in the 9th Division. However, operation briefings at division level were not conducted by the 9th Division as these operations were controlled by regiment. The operations order was normally issued on D minus 1 for deliberately planned operations, which provided sufficient time for units to prepare themselves.

The 22d Division also alerted participating units in time to adequately prepare for an operation. Formal operational briefings were normally held by division on D minus 2 and the written orders were normally issued on the same day.

During planning by all divisions, coordination was timely among headquarters and participating units of both the Vietnamese and US units.

The 21st Division G3 advisor normally coordinated helicopter requirements with corps in sufficient time to obtain helicopter support. The aviation battalion liaison officer to the 21st Division alerted the supporting 121st Aviation Company as soon as it appeared certain that an operation would be conducted. This alert, prior to official notification from the IV Corps combat operations center (COC), gave the aviation unit additional planning and preparation time.

b. US Forces

Since the 121st Aviation Company did not publish a written operations order, aviation personnel were briefed orally on all operations. This briefing was normally given by the aviation battalion liaison officer to the 21st Division and proved adequate for all operations

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observed and documented (annexes A and D). The 9th Division followed the same planning procedures as the 21st Division. The 114th Aviation Company was alerted by the aviation battalion liaison officer of forthcoming operations in order to allow the company more preparation time. Aviation company personnel were normally given an operational briefing by the 9th Division assistant G3 advisor on the evening prior to an operation. The 114th Aviation Company followed up these oral presentations with a written operations order.

For deliberate, planned 22d Division airmobile operations, the 52d Aviation Battalion normally required a 72-hour notice prior to the operation (according to SOP) which, of course, extended the planning time for airmobile operations. Also, an SOP was established for the number of troops to be carried in each transport helicopter. This SOP, though applicable to mountainous terrain in parts of the II Corps area, was unduly conservative for flight conditions within the 22d Division area of responsibility. Both these SOP items restricted operational flexibility. Following corps approval of the planned operation, the aviation battalion conducted a detailed briefing for the aviation company commanders involved. At this time the aviation operations order was issued.

A need existed to provide airmobile-trained units of platoon or company size at the home airfields of the supporting aviation units. These units should have been immediately available to counter enemy threats and, when not on operations, could have provided additional airfield security.

6. Planning for Rapid Reaction

The command and staff planning procedures for airmobile operations of all three divisions were effective. However, a definite need existed to plan and execute airmobile operations in less time than was normally used. The deliberate, planned operation based on outdated intelligence was susceptible to compromise and seldom gained worthwhile results.

For example, operation Sonca 15/16 (annex B) was an airmobile reaction to a VC ambush of a regional force company. The decision to employ an airmobile force was made at 1030 hours but the first lift did not land in the objective area until 1415 hours. Had a standby airmobile force been available along with helicopters, it could have been committed much more rapidly. A well-trained standby airmobile force could be employed with a minimum of planning and maximum effectiveness.

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7. Findings

a. Most deliberate planned airmobile operations were based upon outdated intelligence information.

b. There was a need for more rapid planning and execution of airmobile operations.

c. Plans for airmobile operations had to be approved by corps before helicopter support could be obtained. This increased the planning time and limited the number of operations the division could conduct. It was the opinion of ACTIV evaluators and many advisors and aviation personnel that the aviation company should be placed in direct support of each division and divisions should be given the authority to conduct airmobile operations without first obtaining corps approval.

d. United States advisors were able to influence planning since the division senior advisor's approval was required for helicopter support.

e. During the evaluation, weather had no significant effect on planning, but should not be disregarded as a planning factor.

f. Loading and landing plans had been reduced to SOP, thereby eliminating the need for detailed plans for every operation.

g. Aviation support was effective with or without written operations orders when adequate briefings were conducted.

h. In general, the tactical plans of the 9th and 21st Divisions provided for greater flexibility by planning for the use of an airmobile reserve.

i. Units participating in airmobile operations received timely warning orders.

j. The 72-hour notification required by the 52d Aviation Battalion was excessive.

k. In many ways, the use of SOP's reduced planning time, but in some cases restricted operational flexibility.

l. Additional security is required at the home airfields of the supporting aviation units.

B. OBJECTIVE 2 - ORGANIZATION FOR COMBAT

1. 21st Division

All but one of the 21st Division airmobile operations observed

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during the evaluation were conducted in conjunction with a large ground maneuver force. The ground maneuver organization for combat normally consisted of separate battalions or of task forces or battle groups composed of two or more battalions assigned the mission to search and clear specific objectives. One or more battalions usually constituted the airmobile force. At the start of the evaluation, mid-January 1965, the division had two ranger battalions and one reconnaissance company well-trained and experienced in airmobile operations. By the end of the evaluation period, July 1965, the division had trained three additional infantry battalions in airmobile operations. The division had not yet trained Regional or Popular Force troops in airmobile operations, although it planned to do so in the future.

In addition to ground maneuver and airmobile forces, fire support in the organization for combat included one or more platoons of artillery and VNAF, USAF, or USN fighter bombers. The reserve usually consisted of at least one airmobile force of battalion strength. An armored cavalry troop was employed either in a ground maneuver role or in reserve. Regional Force and Popular Force units were employed as blocking forces or in small search and clear operations.

On all operations observed, units were logically selected and were assigned appropriate missions. Friendly Vietnamese forces always had a superiority over the VC in numbers and fire support.

2. 9th Division

The 9th Division did not conduct large scale airmobile operations during the evaluation because its units were widely scattered and committed to security missions that precluded moving them from their areas of responsibility. In order to have a flexible airmobile capability, the division commander had required many division units to undergo extensive airmobile training. They included a ranger battalion, regimental reconnaissance companies, and a rifle company from each infantry battalion. Also, 12 Regional Force companies were trained for airmobile operations. These trained units provided the commander a means of conducting airmobile operations anywhere in the division area without having to move specific airmobile trained troops any great distance.

During the evaluation, the 9th Division conducted one reaction and three search and clear airmobile operations which employed airmobile forces in conjunction with ground maneuver forces. A typical organization for combat consisted of a regimental headquarters as the control headquarters plus two or three ARVN infantry battalions, a Regional Force battalion, and an armored cavalry troop. On two operations, River Assault Group units took part in the operation. The airmobile force was normally a battalion, with one or more battalions in reserve. Fire support consisted of one or more platoons of artillery plus close air support.

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As with the 21st Division, units were logically selected and assigned appropriate missions. Republic of Vietnam forces outnumbered the VC. On two operations the ARVN had a numerical superiority of 3 or more to 1 plus superior fire power but they were still unable to close with and destroy the VC.

3. 22d Division

The 22d Division conducted two separate types of airmobile operation: the eagle operation and the battalion-size airmobile assault. The organization for combat for eagle operations was established by SOP and the size of the force rarely varied although different participating units were employed. The eagle force consisted of 36 men divided into five 6-man assault teams and one 6-man control team. Six transport helicopters, five armed helicopters and one medical evacuation helicopter made up the aviation support. One armed helicopter was assigned an additional mission of evacuating POW's. Close air support and artillery units were used only when surprise was not considered to be of great importance. The reserve for the eagle operation was a similarly organized 36-man force but the only reserve helicopters available were two additional armed helicopters on standby at the departure airfield. The eagle force was adequate and easily controlled provided it was used within its stated missions of conducting raids for the purpose of obtaining POW's or intelligence, protecting downed aircraft, or assaulting VC units of less than platoon size. The transport helicopters remained in the operational area in order to extract the force should the VC strength be larger than expected. At the time of the evaluation, the 22d Division had three companies trained in executing eagle operations, two scout and one reconnaissance. Civilian Irregular Defense Groups (CIDG) and Regional and Popular Forces in the 22d Division area, were being trained to conduct eagle operations.

The organization for combat employing battalion-size airmobile forces normally consisted of a regimental task force and one or two separate battalions to operate as the overland force. A reinforced battalion was used as an airmobile assault force and a battalion (-) as a reserve. Close air and artillery fires were always included as part of the planning. The maximum number of available transport helicopters were employed in order to lift the maximum number of troops in one lift. On all observed operations the organization for combat contained forces numerically superior to the suspected VC force and should have been adequate to accomplish the planned mission. However, reserve airmobile forces were sometimes small in size and lost their air transportation early in the operation when the helicopters were released.

The selection of units to participate in battalion airmobile operations was hampered by the fact that the organic units of the 22d Division were spread throughout the corps area with regiments outside of the division tactical area (DTA) and not available for airmobile

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operations within the DTA. For this reason the 22d Division Commander was dependent upon attachments, such as the ARVN airborne and Marine task forces, to assist in conducting battalion-size operations.

4. Findings

a. Friendly Vietnamese forces always had a planned superiority in numbers plus superior supporting fires but superiority alone did not assure mission success.

b. For all observed airmobile operations, units were logically selected and assigned appropriate missions.

c. Division commanders increased their operational flexibility by training as many units in airmobile operations as time and aircraft permitted.

d. The organization for combat for the 22d Division's 36-man eagle operations was tailored to perform specific missions.

e. With the exception of 22d Division eagle operations, the organization for combat for all three divisions' operations always included artillery support and usually provided for close air support.

f. On all operations observed the mission and mobility of the reserve airmobile force in the 22d Division was terminated prior to attainment of objectives by release of the transport helicopters.

C. OBJECTIVE 3 - COMMAND AND CONTROL PROCEDURES

1. Controlling Headquarters

a. 21st Division

All 21st Division airmobile operations were effectively controlled by division headquarters. The use of the same control headquarters and its experienced staff resulted in the development of procedures that eliminated or reduced to a minimum the liaison and coordination that would have been required with regiment or sector headquarters as the control element. A tactical command post (CP) adjacent to the staging airfield was normally established by the 21st Division and staffed with the personnel and communications equipment necessary to control the operation.

The 21st Division effectively employed a command and control (C&C) helicopter equipped with a communication console that enabled the commander to control all airmobile operations. This aircraft, carrying the division commander, the aviation company commander, the senior US advisor, and selected staff, was airborne over the combat area throughout

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the operation. The 21st Division employed the C&C helicopter to a greater extent than did the 9th and 22d Divisions.

A fire support coordinator was usually located at the tactical CP of the controlling headquarters. This was true in all divisions. In the opinion of ACTIV's evaluators, a fire support coordinator should have been with the command and control element in the C&C helicopter where he could advise the commander and more effectively control and coordinate fire support during the highly fluid initial phase of an airmobile operation.

b. 9th Division

The 9th Division policy was to establish the controlling headquarters for airmobile operations at the lowest possible command level. The operations documented in annex B were habitually controlled by regimental headquarters.

Regiments in the 9th Division established a tactical CP adjacent to the area of operations but on only one operation was this CP also adjacent to the staging airfield. Command and control was affected to some extent by not having the CP near the staging airfield. Also, since the C&C helicopter had to return to the staging airfield for refueling and then proceed to the tactical CP for pick up of the regimental commander and his US advisor, some time was lost which could have been prevented by placing the CP at the staging airfield.

The Regimental commanders and the US advisors utilized one C&C helicopter to control the heli-lift portion of operations. A second C&C helicopter was used by the 9th Division commander and the senior advisor from which to observe and monitor operations. An additional vector control aircraft, usually an O-1 airplane piloted by the aviation company executive officer and carrying the assistant division G3 advisor, was airborne throughout the operation to coordinate and control movement of US Army aircraft. It also provided an advisor radio relay.

c. 22d Division

For battalion-size airmobile operations in the 22d Division, overall command and control responsibility rested with the division commander. In order to exercise effective control, a small tactical CP was located at the staging airfield during each of the three battalion operations documented and the CP remained operational until the heli-lift phase was completed. Once in the objective area, this battalion reverted from division control to one of the task force commanders. In two of the three operations, there were two separate task forces (TF) involved. Each TF commander controlled the elements of his force and no one commander in the operational area controlled the operations of both task forces. The division TOC at Phu Cat was responsible for coordinating

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and controlling the combined actions of the TF's.

As was done in the 9th Division, the 22d Division used two C&C helicopters on each operation. In contrast with the 9th Division, the 22d Division C&C helicopter did not remain in the operational area after the heli-lifted troops were landed. Furthermore, coordination between the US advisor and aviation battalion commander was difficult as they were usually in different helicopters.

On eagle operations in the 22d Division, command was invested in the ARVN assault team leader. Control of airlift, however, was effected by the US advisor and the aviation flight leader, with the US advisor making the decision on commitment of the reserve. The advisor and aviation flight leader also controlled the lift, extraction, and armed helicopter support. The division commander, his staff, and the US division advisory staff were provided a C&C helicopter but there were no prescribed command and control functions delegated to them. On the one eagle operation evaluated, the C&C helicopter was used only to monitor the actions and to relay radio transmissions if required.

In the opinion of the project evaluators, the 21st Division operations were more effectively controlled than those conducted by the 9th and 22d Divisions. This was attributed to the fact that the 21st Division staff and commanders were more experienced and therefore exerted better control. This control was further facilitated by use made of the C&C helicopter as an airborne command post throughout operations.

2. US Control

The airlift phase of all airmobile operations conducted by the three divisions was US directed and controlled. This included selection of the landing zones, control of aircraft and airspace over the operational area, landing and pickup of troops, fire support, re-supply, and medical evacuation by helicopter. With the US personnel providing this detailed coordination, the ARVN commander was provided the opportunity to concentrate more on the ground phase of the operation.

a. 21st Division

During the airlift phase of the 21st Division operations, the senior US advisor controlled the operation with the assistance of the 121st Aviation Company commander. He decided when and where to commit the airmobile force and, together with the aviation company commander, selected the LZ. The aviation company commander controlled the Army aircraft in the operational area and directed the transport helicopters into and out of the LZ's. He also directed the armed helicopters on missions requested by the senior advisor. The senior advisor controlled the initial movement of the airlifted force through advisors with the committed units. This was done with the concurrence of the division commander.

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b. 9th Division

The airlift phase of the 9th Division operations was similar to the 21st Division except that in place of the division senior advisor, the regimental senior advisor and the 114th Aviation Company commander controlled the operation.

c. 22d Division

On the 22d Division operations, the 52d Aviation Battalion commander controlled the airlift phase of operations.

3. Communications

Communication networks employed for each division airmobile operation are described in detail in the annexes. Radio communication was effectively maintained in all operations observed and, on many operations, an O-1 aircraft was used as a radio relay to extend the range of FM communication. A definite need existed for an improved radio communication capability for US advisors. It was felt that the AN/PRC-25 radio, which is more effective than the AN/PRC-10, would have been satisfactory. Also, the AN/PRC-10 will not net with the FM radios installed in later model helicopters whereas the AN/PRC-25 will net with them.*

4. Findings

a. The 21st Division airmobile operations were controlled by division headquarters; the 9th Division operations were generally controlled by regimental headquarters; and the 22d Division operations were controlled by TF commanders once the heli-lifted force was landed.

b. In the 22d Division operational area, control reverted to independent TF commanders and no single commander was designated to control the separate TF's in the conduct of the operation.

c. The airlift phase of all airmobile operations conducted by the three divisions was US directed and controlled.

d. A command element in a C&C helicopter afforded an effective means of controlling airmobile operations.

e. The unit tactical CP on the ground was not the best location for the fire support coordinator for airmobile operations.

* The AN/PRC-25 is presently programmed to replace the AN/PRC-10 in all advisory units.

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f. Although radio communications were effectively maintained on airmobile operations, considerable improvement could have been realized if the AN/PRC-25 radios were issued in lieu of the AN/PRC-10.

D. OBJECTIVE 4 - TACTICS, TECHNIQUES, AND PROCEDURES

1. Loading

Loading of helicopters in the 9th, 21st, and 22d Division operations posed no significant problems, since standing operating procedures had been established by all divisions and written loading plans and manifests were not used or required, thereby reducing preparation time.

The loading technique was to position the troops beside their assigned helicopter or beside the proposed loading site. The 114th Aviation Company, supporting the 9th Division, used portable wooden markers or pylons to mark loading points. This was a simple and effective measure.

One problem observed during several 9th Division operations was the effect of dust blown about by the helicopters. When possible, loading sites should be selected to minimize this hazard to flight. It was observed that dust actually fouled some of the weapons carried by the airmobile troops.

The rapid and professional manner in which loading of the helicopters was accomplished in all divisions demonstrated the value of trained helicopter crews and infantry troops. Another factor contributing to efficient helicopter loading was that many of the crews and airmobile troops had worked together previously. Troops in all divisions seemed perfectly at ease in and around helicopters and on all occasions they observed normal safety precautions.

On two 21st Division operations, troops were picked up and re-located within the objective area. These troops were well-trained and, when told to prepare for pickup, immediately grouped into their original loads and properly spaced themselves along the new loading zone. Troops thus trained in proper loading techniques provided the commander with greater flexibility in operations.

2. Air Movement

The area between the departure airfield and the LZ was always assumed to be under VC control. Enroute altitudes of 3000 feet above the terrain were flown during 21st and 22d Division operations to avoid VC ground fire and, in the 9th Division, an enroute altitude of 2000 feet was used. Enroute airspeed was usually 80 knots. Transport helicopters normally flew vees-of-five in trail. Initially, the 121st Aviation Company supporting the 21st Division flew a staggered trail formation (annex A). During the last part of the evaluation period they

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changed to the vee-in-trail (annex D). The vee-in-trail formation is more compact than the staggered trail formation and may be more effectively escorted by armed helicopters.

On 9th Division operations, initial points and release points were used for control of helicopter movement. Usually, the shortest route was flown. Alternate routes were not planned because of the relatively short distances to the objective areas and non-availability of known safe routes. Overflights of densely wooded areas and tree lines were avoided because of the danger of concealed anti-aircraft weapons.

Initial points and release points were not used on 21st Division operations. A direct flight route was normally flown from the staging airfield to the objective area. For the reasons mentioned for the 9th Division, alternate routes were not planned and overflight of wooded areas at low altitudes was also avoided.

The 22d Division used initial points and release points for control and selected flight routes to avoid suspected VC anti-aircraft locations. Alternate flight routes were planned in the event wind direction necessitated a change in the planned landing direction. It was suspected by many 22d Division advisors that VC spotters relayed information concerning movement of helicopters. Even though flights of transport helicopters were safer at high altitudes, they were more easily seen at a distance.

On all operations, many different types of aircraft performing different missions flew in the operational area. In order to establish separation to reduce the collision hazard, flight levels were assigned according to aircraft mission.

3. Landing

Landing techniques are described in detail in the annexes. As previously mentioned, selection of LZ's in the 9th and 21st Division areas posed no problem, since large, clear areas were invariably available near objectives. However, because of the mountainous terrain and dense foliage in the 22d Division operational area, suitable LZ's were scarce and often not available near assigned objectives. The fewer LZ's available made ambushes more likely, thus requiring greater caution during landing.

Landing zones in the 22d Division normally were large enough to accommodate only one vee-of-five flight of helicopters at a time. On 9th and 21st Division operations, the LZ's were large enough to accommodate flights of 10 or more helicopters.

The transport helicopters landed in formation, far enough apart for adequate dispersion yet close enough for effective control of the

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troops after deplaning. Upon leaving the aircraft, troops immediately formed into a skirmish line and moved toward the initial objective, often employing assault fire. Wind direction permitting, landings were made parallel to the objective, which facilitated the forming of troops on-line for maximum firepower in the assault.

Landing zones used varied in distance from 300 to 1300 meters from the initial objective. In the opinion of most aviators and unit advisor personnel, 400 meters from a tree line or objective was considered to be the minimum safe distance.* This distance placed the helicopters and troops beyond maximum effective range of most small arms fire. Troops in an airmobile operation were, of course, most vulnerable when unloading from the helicopters during the initial transition period from passenger to ground fighter. In the event VC were located in a forest or near an objective, the 400 meters would provide space and time to effectively take the VC under attack. On the other hand, if the LZ used were immediately adjacent to or in the midst of a VC concentration, the airmobile force could be decimated. Some areas in RVN do not, however, permit this desired 400 meter separation (rice paddies, numerous canals, rivers, etc). In such cases, smoke could be used effectively to screen the airmobile forces during its most critical phase.** As improved smoke screening devices become available, the desired 400 meter separation could be reduced. Landing zones located at distances greater than 400 meters give, of course, the VC more time in which to react.

4. Ground Tactics of the Airmobile Forces

a. General

In general, tactics were simple and effective. Emphasis was on shock action and aggressiveness. The heaviest weapons used were light machineguns and 60mm mortars.

* See also "Helicopter Operations in the French-Algerian War" (U), Research Analysis Corporation Technical paper RAC-TP-154, June 1965, p 18.

** Current devices such as the E-158, which dispense smoke or riot control agents, are heavy and mounted externally and therefore reduce payload of helicopter and preclude the mounting of external weapon systems. Internally mounted smoke or riot control agent dispensers, which dispense through the helicopter exhaust system, are under development.

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Communication within units was by visual and audio signals and, among units, was by PRC-10 radio.

On many operations, airlift forces were committed as part of a broad ground maneuver plan rather than in an independent role. These airlifted forces were normally assigned search and clear missions involving an eventual linkup with the other ground maneuver forces.

In the majority of operations conducted by the three divisions, it was necessary for certain ground maneuver elements to move some distance to the objective area by road or waterway. When troop movement was made the day before an operation, it provided the VC an indication of impending action. On only one operation were troops moved as part of a deception plan. Any type of deception such as reconnoitering for LZ's not to be used or a pre-strike in another area, or a small force heli-lifted to other than the objective would probably have proved very effective.

b. Role of US Advisors

United States advisors equipped with FM radios normally accompanied the heli-lifted units and an advisor usually flew with the operational troop commander. Enroute, the advisor to the unit commander received ground maneuver instructions for his counterpart from the control element in the C&C helicopter. In addition to his advisory role, he performed liaison with the command element in the C&C helicopter, acted as a controller for armed helicopter fire support, and coordinated airstrikes with the forward air controller (FAC). On the 21st and 22d Division operations, at least two US advisors accompanied each unit lift, so that in the event one advisor became a casualty, the other could maintain liaison with the armed helicopters and USAF tactical fighter aircraft.

c. 9th Division

On 9th Division operations, the search and clear mission usually involved clearing a wooded area lining a canal. The division maintained a strong airmobile reserve as a reaction force, which was often employed to search and clear areas from which armed helicopters had drawn fire. Both airmobile and surface troops effectively searched objective areas in skirmish lines.

On two 9th Division operations heavy contact was made with the VC and in both instances the VC were able to withdraw after dark. On the first operation two ranger companies had been heli-lifted to the vicinity of a canal with the mission to search and clear both sides of the canal. After landing, instead of exploiting the element of surprise afforded them by the helicopter movement, both companies halted for a 2-hour lunch break on the east bank of the canal. No security element

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had been established on the west bank. After lunch, as the units started to move out, they were pinned down by VC fire. The ARVN lunch break had given the VC preparation time to maneuver into position to stop the rangers who never were able to regain the offensive. The VC withdrew after dark. On the second operation the momentum of the attack was lost when one ARVN battalion halted and waited over an hour for artillery support. The VC were able to delay the advance until dark. On both of these operations, most of the ARVN ground forces fought well but did not maintain the momentum of the attack.

d. 21st Division

The first 21st Division operation conducted during the evaluation was a highly successful one in which the flexibility, mobility, and shock action of helicopter assault forces were exploited to the maximum by the division commander and the senior US advisor. The VC were outmaneuvered in the objective area through re-positioning the troops by helicopter lift. This re-positioning technique was also effectively used during the second 21st Division operation. As was the case with the 9th Division, the 21st Division usually performed search and clear missions and maintained a strong airmobile reserve.

e. 22d Division

During the ground maneuver phase of 22d Division operations, the committed airmobile force normally moved to successive objectives in column formation with flank security. The movement between objectives was often too rapid and the front too narrow to allow for a thorough area search. Objectives were searched in a skirmish line but search techniques were not thorough. In many instances homes, tunnels, and thickets were avoided or reconnoitered by fire rather than by physical search.

On the 22d Division eagle operations, the movement was in a skirmish formation and troops fired their weapons almost continuously. The control of the movement was excellent but the fire was inaccurate and the fire discipline poor. Aside from the waste of ammunition this uncontrolled fire was dangerous to friendly personnel.

5. Results

The airmobile operations conducted in conjunction with large ground maneuver forces seldom resulted in VC contact of any significance. The usual scheme of maneuver on these large operations was for the ground maneuver forces to search and clear along routes of advance from objective to objective, eventually converging with the airmobile blocking force in order to trap the VC or force them to break into the open where they could be taken under fire by armed helicopters, artillery, or fighter aircraft. However, the VC normally did not stand and fight superior ARVN forces unless given no other choice. When advance warning was received, the VC

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avoided contact by moving out of an area prior to an operation, often by sampan. At the beginning of many operations, hundreds of sampans were observed leaving the area, many undoubtedly containing VC. Some hid their weapons and assumed the guise of local farmers. Occasionally they were picked up as suspects. Others moved on foot along tree lines not being searched by ARVN. Their movement was learned from local civilians too late to take action. Viet Cong also endeavored to cross the rice paddies or other relatively open areas individually or in small groups, again pretending to be local peasants. They were sometimes seen by observers in aircraft but the VC's lack of proximity to ground elements made it impractical to apprehend them.

Reaction and rapidly planned and executed operations were more likely to gain contact with the VC than large deliberately planned operations. Employment of an airmobile force on these hasty operations provided a means of fixing the VC before they had time to withdraw. This was evident from the fact that of the 16 airmobile operations documented, only 3 made strong contact with VC. Of the three, one was a hastily planned operation and one was a reaction to a VC attack. On the third operation, when the original plan was executed with no results, the regimental commander, urged by his US advisor, decided to investigate another area in which contact with the VC was made.

6. Findings

a. Loading was effectively accomplished and loading time reduced to a minimum by well-trained helicopter crews and infantry troops using a standard, unwritten, loading plan.

b. Dust at staging areas posed a hazard to flight and in one operation fouled troop weapons.

c. The use of helicopters to move troops to and within the objective area provided the commander with mobility and operational flexibility.

d. Transport helicopters flew to and from the objective area at altitudes varying from 2000 to 3000 feet. At these altitudes, however, they could be seen by the VC at greater distances, thereby alerting the enemy even sooner.

e. Initial points and release points afforded a simple, effective means of control for helicopter movement.

f. Assigning aircraft flight levels over the operational area according to mission was effective in reducing the hazards of collision.

g. Terrain and wind direction permitting, landings were made parallel to the objective to facilitate the ground tactics. Four

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hundred meters from a tree line or objective was considered to be the minimum safe distance for landing by most aviators and unit advisor personnel. Distances greater than that provided the enemy too much reaction time.

h. A US advisor with each airmobile unit advised the ARVN unit commander, maintained liaison with the C&C helicopter, controlled armed helicopter suppressive fires, and coordinated airstrikes. Two advisors with each unit were desirable in the event one became a casualty.

i. On two operations, the element of surprise and momentum of the attack was lost when the troops halted. They were unable to regain the initiative and defeat the VC.

j. Reconnaissance by fire was too frequently employed in place of physically searching and clearing an area.

k. Troop movement in advance of an operation provided the VC an indication of impending action.

l. Airmobile operations conducted in conjunction with large maneuver forces seldom resulted in VC contact of any significance. The reaction and the rapidly planned and executed operations did, however, result in strong VC contact.

E. OBJECTIVE 5 - FIRE SUPPORT MEANS AND PROCEDURES

1. Artillery

Division artillery in all cases was widely dispersed in static firing positions throughout division areas of responsibility and had the normal mission of providing preplanned concentrations of defensive fires in support of towns, villages, and outposts. Lack of an adequate or secure road network limited planned displacements. Although widely dispersed, the employment of artillery was planned for all operations observed except one 22d Division eagle operation. The platoon was the average size artillery organization in support of operations. Planned artillery fire support in the 9th and 21st Division airmobile operations was accomplished by employing platoons nearest the proposed operational area. Occasionally, operational areas were located within range of fixed positions and the artillery did not have to be displaced.

The 22d Division employed artillery in support of all its battalion or larger size airmobile operations. Artillery units were selected depending on their mission or commitment to other missions and their proximity to the objective area. On two of the three battalion operations observed, artillery elements were required to displace in order to support the operations. On one operation, engineers had to repair roads so that the artillery could displace. In most instances the

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artillery was employed against suspected VC locations only.

Artillery fire support plans were normally prepared for deliberately planned operations. The mission usually assigned to artillery units was that of direct support to specific units or task forces.

Committed maneuver units were provided forward observers (FO) and at least one airborne FO was employed to support the entire force. Each platoon had its own fire direction center (FDC) that received the fire mission requests from the FO. These requests were monitored and approved by the fire support center at the tactical CP.

Ammunition available in support of airmobile operations was HE and WP with a variety of fuzes--quick, super quick, controlled variable time, delay, etc.

Artillery was employed in its many roles but in varying amounts and degrees by all three divisions. However, it was not employed in the objective area during the airlift phase of operations. To have fired artillery at this time would have necessitated clearing the air space of aircraft performing essential tasks. Moreover, artillery was not employed on any of the first five 21st Division operations. It was requested on one occasion, however, but the aerial observer was unable to identify the target. Commanders normally relied on armed helicopters and fighter aircraft in the area to support the airmobile force because these fire support means had proved more responsive than artillery. The US advisors with the 21st Division recognized the problem of coordinating air and artillery and, during the latter part of the evaluation, improvements in coordination were being devised by which the artillery and armed helicopter fires could be used simultaneously in the same approximate area.

During two 9th Division operations, targets developed that were lucrative for the employment of artillery but it was not employed because the commanders were unwilling to accept an alleged high risk to friendly troops. Improvements were made, however, as the evaluation progressed and commanders gained more confidence in artillery. On another 9th Division operation, artillery was employed before the airlift phase when ground fog precluded use of other fires. Later during this same operation, artillery was fired in one part of the operational area while armed helicopters were being employed in another part. Control of the two fire support means was effectively coordinated by the control element in the C&C helicopter. Advisors to the 9th Division were of the opinion that the ARVN relied too much on armed helicopters and Air Force aircraft and should have employed more artillery, especially on hard targets.

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2. Armed Helicopters

Armed helicopters were employed in support of all airmobile operations. They were used for reconnaissance, escort of transport helicopters, and delivery of close, accurate fires in support of ground maneuver units. Armed helicopters were required (in preference to the high speed fixed wing aircraft) in certain situations because of their speed, hovering capability, and close, accurate suppressive fires.

Normally, two armed helicopter platoons were employed in support of 9th and 21st Division operations. They alternated on station in order to provide continuous support for the operation. Armed ships had the missions of:

- a) Reconnoitering the LZ.
- b) Directing and escorting the transport helicopters into and out of the LZ.
- c) Providing suppressive fires when required by the airmobile forces.
- d) Reconnoitering suspected VC locations within the objective area. When reconnoitering suspected VC locations they endeavored to draw fire, thereby establishing a mission and location for employing airmobile reserves.

On five of the eight 21st Division operations observed, an airmobile force was committed to search and clear areas from which armed helicopters had received fire.

The 22d Division employed the armed helicopters in much the same manner as the 9th and 21st Divisions. After the airmobile forces had landed and moved off the LZ, the armed helicopters were released. On 22d Division eagle operations, however, the armed helicopters remained over the area throughout the operation and provided fire support to the eagle force.

Effective tactics and techniques have been developed by the armed helicopter platoons and are described in detail in the annexes. These maneuvers are constantly being improved and adapted to the current tactical situation.

The UH-1B armed helicopter proved invaluable to the execution of an airmobile operation but it had some limitations:

- a) It could not neutralize VC in well dug-in positions.

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- b) Fuel capacity limited its operations to less than 2 hours flying time.
- c) Its cruise speed was less than the transport helicopters, especially the UH-1D model.
- d) It was limited in the amount of ammunition that it could carry.

3. Close Air Support

During the evaluation the amount of close air support requested and employed on airmobile operations increased because of the increased use of pre-strikes in and around the LZ and the increase in the number of US tactical fighters and FAC's in Vietnam.

Air request procedures were adequate and, in most instances, division requests for close air support were approved. There were only three operations evaluated in which close air support was not provided as requested.

Airstrikes were controlled by both VNAF and USAF forward air controllers. Vietnamese Air Force FAC's controlled strikes by VNAF fighters, USAF FAC's controlled all US and some VNAF airstrikes.

Vietnamese control of close air support was at times ineffective. On one 9th Division operation the Vietnamese FAC misdirected the strike. On another 9th Division operation repeated attempts by a US advisor to contact the FAC proved fruitless. At critical moments in the same two 9th Division operations US advisor personnel were unable to communicate directly with the VNAF FAC. It was the opinion of US advisors and ACTIV's evaluators that these incidents could have been avoided if USAF pilots had flown with the Vietnamese FAC.

Airstrikes conducted in the 22d Division operations were controlled solely by USAF FAC's employing US strike aircraft. The results were impressive, particularly during the first phase of operation QT 141 (annex C) when fighters dropped napalm bombs 200 to 300 meters from the LZ. Also, during the second evaluation of 21st Division operations, landing zone pre-strikes were made by US fighters under USAF FAC control. On most operations with USAF FAC's, a VNAF FAC was in the rear seat of the aircraft to coordinate with the ARVN ground units requesting airstrikes.

On two of the 22d Division operations and one of the 21st Division operations, airstrikes were requested and flown in the objective areas a day or two before the airlift operation. This could well have compromised the operation. Final pre-strikes on 22d Division operations were started 20 to 30 minutes before the first heli-lift. On one operation

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the airstrike was terminated just minutes before the landing and on the two other 22d Division operations strikes were continued on areas adjacent to the LZ during the landing of the helicopters. This latter technique, though requiring closer control and coordination, was the most effective method of protecting the transport helicopters.

Screening smoke was not planned for nor employed on any air-mobile operations observed during the evaluation.

Close air support was not requested on the one eagle operation of the 22d Division, even though the operation was beyond the range of ground support fires. The A-1E's from Qui Nhon, available for close air support, could have provided much heavier fires than the armed helicopters.

Both the propeller driven A-1E/H and jet aircraft were employed in close air support of airmobile operations but the A-1E/H aircraft had the following advantages:

- a) The A-1E/H could remain on station longer than the jet aircraft. There were many variables, but a rough average comparison was 2 to 3 hours for the A-1E/H compared with 30 or 40 minutes for the jet.
- b) The A-1E/H carried a heavier and more varied armament load than the average jet fighter in current use.
- c) Delivery was more accurate with the A-1E/H because its slower dive speed permitted lower bomb release altitudes. Hence, the A-1E/H could deliver ordnance closer to friendly troops.
- d) A-1E/H aircraft could deliver ordnance effectively under lower cloud ceilings than other fixed-wing aircraft due to lower air speeds and maneuverability.

On many operations aircraft were requested and allocated to fly continuous overhead cover. This was usually desirable from the commander's viewpoint because it produced the minimum response time but it was not always the most effective use of tactical air. The additional aircraft required for continuous cover could have been used on other missions. When the response time from scramble to target was acceptable to the division commander, close support aircraft remained on ground alert. The advantage to ground alert aircraft is the various armament loads that can be selected for the available aircraft, whereas once an aircraft is committed to air alert, the load that it carries must be employed if that aircraft is called for. Ground alert aircraft, on the otherhand, can be loaded with smoke, napalm, bombs, etc.

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4. Suitability of Fire Support Means

The artillery, fighter/bomber aircraft, and armed helicopters normally available to the commander were suitable to neutralize or destroy the type of targets which developed during operations. Targets ranged from small groups of VC forces moving through relatively open areas to organized VC units occupying well-fortified positions concealed within wooded areas. Between these two extremes were many targets vulnerable to the effect of one or more of the available fire support means.

Some ground commanders and unit advisors thought that the armed helicopters were more readily available, more controllable, and more accurate than artillery or fighter aircraft. For example, on one operation, the 21st Division's Dan Chi 117, two reconnoitering armed helicopters were hit and put out of action by automatic weapons fire, while two fully loaded VNAF A-1H fighters orbited overhead unused. In another situation armed helicopters were ordered to suppress enemy fire in the area prior to the commitment of an airmobile force while available artillery or fighter strikes were not used. On two 9th Division operations armed helicopters were ineffectively used on hard targets that could have been more effectively attacked by artillery or fighter/bomber aircraft.

During most operations some type of fire was delivered on or near the IZ prior to and during the arrival of the airlifted troops. In many cases, these pre-assault fires were placed in villages. In every case where a village was the target, homes were destroyed with the attendant possibility of civilian casualties. The use of non-toxic riot control agents would have precluded this possibility. Although secondary explosions were reported by pilots on various occasions, there were never any VC bodies discovered that could be positively attributed to the effects of pre-strikes and preparatory fires. Consequently, the value of pre-strikes and suppressive fires could not be assessed accurately. In the opinion of many advisors, however, these pre-assault fires were necessary and saved many lives and helicopters. The effect pre-assault fires may have on the government's effort to maintain the support of the people could not be determined.

5. Findings

a. Although artillery fire support was planned for in all but one operation, it was not employed during the airlift phase of any operation.

b. The capability of the armed helicopter to provide escort for airlift elements, to provide effective reconnaissance, and to provide responsive fire and protective cover for ground elements, established it as a significant support means for airmobile operations.

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c. Although the armed helicopter in its present configuration was effective, improved speed, fire power, and endurance would increase its combat effectiveness.

d. As the evaluation progressed there was a significant increase in the amount of close air support requested and employed in support of airmobile operations.

e. Air request procedures were adequate.

f. When joint USAF/VNAF close air support was used, better coordination and control was effected when a USAF FAC and a VNAF FAC operated in the same aircraft.

g. United States Air Force close air support strikes were effectively controlled by USAF FAC's.

h. Operations were compromised by airstrikes conducted too far in advance.

i. The most effective prestrike technique was for fighter/bomber aircraft to bomb and strafe the LZ and adjacent areas shortly before the arrival of the airmobile force and to continue to strike areas adjacent to the LZ while the transport helicopters landed.

j. Armed helicopters were employed effectively to suppress areas between the LZ and fighter strike target areas.

k. Screening smoke was not requested nor used on any of the airmobile operations.

l. For one 22d Division operation, aircraft were not requested to be on either ground alert or air alert. If there had been a requirement for close air support none would have been available.

m. The A-1E/H aircraft was better suited for close air support of airmobile operations than was the jet fighter aircraft. The jets were effective in the pre-strike role.

n. Continuous overhead fighter cover provided the commander with an immediate strike capability but it was not always the most efficient use of tactical air.

o. The three means of fire support normally available to the commander were adequate to support airmobile operations but there was a definite lack in the employment of available artillery and mortar fire in conjunction with helicopter and close air support.

p. The value of pre-strike fires was not determined. They were, however, considered necessary by many advisors.

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F. OBJECTIVE 6 - LOGISTICAL SUPPORT

Most of the logistical support procedures for airmobile operations had been standardized by all three divisions. The general procedure was to pre-stock fuel and ammunition for the helicopters at the staging airfield selected for the operation either by having permanent stocks on the field or by moving supplies to the area. Vietnamese supplies to be delivered by helicopter to the operational area also were normally moved to the staging airfield prior to the operation.

Many of the staging airfields used by the divisions were permanently stocked with fuel and ammunition as SOP. The stock levels maintained at these fields were based upon experience and in all cases proved adequate.

1. Re-fueling and Re-arming

Re-fueling of helicopters at the staging field was normally accomplished by means of M49 fuel tankers or trucks with either 50-gallon drums or 500-gallon collapsible tanks employing airmobile portable pumps. The portable pump, equipped with necessary hoses, had a 50-gallon per minute capacity and was mounted on a tubular steel frame with two retractable wheels. The system weighed 500 pounds and was easily transported by helicopter. Trucks with mixed loads of 2.75-inch rockets and 7.62mm machinegun ammunition were used in re-arming the helicopters. Normally, refueling and re-arming of an armed platoon took about 45 minutes.

2. Maintenance

On all operations an efficient and well-trained maintenance team was available at the staging airfield for minor aircraft repairs. Often, a CH-37 helicopter was located at the staging airfield to recover downed aircraft. The maintenance team was supported by a UH-1B helicopter which orbited the LZ during the troop landing and was immediately available to provide minor maintenance and repair service as needed.

3. Medical Evacuation

Helicopter evacuation was rapid and timely and often the only means of removing casualties. A medical evacuation helicopter normally orbited over the operational area and picked up casualties when it was directed to do so by the control element. Armed helicopters always escorted the medical evacuation helicopter into and out of the pickup area.

4. Class I Supply

On the 9th and 21st Division operations, the ARVN troops were

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given a monetary food allowance to purchase food in the operational area. Food was sometimes taken from local inhabitants without paying for it. The monetary food allowance system required the individual soldier to locate, procure, and prepare his own food, thereby detracting him from his primary mission.

On the 22d Division operations, ARVN soldiers normally carried sufficient uncooked rations to last for at least 3 days. These were normally supplemented by food obtained in the objective area. As in the other two divisions examined, equipment that had to be carried by each soldier for his food preparation was bulky and the time required to prepare food detracted from the mission.

5. Findings

a. Most of the logistical support procedures for airmobile operations were standardized.

b. Staging airfields were adequately equipped and pre-stocked with ammunition and fuel for all operations.

c. Maintenance personnel were provided at the staging airfield and in the objective area for on-the-spot repair of disabled aircraft.

d. Helicopter evacuation of casualties was rapid and timely and often the only means of removal.

e. The requirement in some units for the individual ARVN soldier to acquire and prepare his own food while on combat operations detracted from his primary mission.

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IV. (C) CONCLUSIONS AND RECOMMENDATIONS

These conclusions and recommendations are based only upon observation of Army of the Republic of Vietnam airmobile operations.

A. CONCLUSIONS

1. An imperative need exists for current intelligence on which to base plans for airmobile operations.
2. The rapidly planned and executed airmobile operation is more effective than the deliberately planned operation.
3. Division commanders need the authority to conduct airmobile operations within their area of responsibility without first obtaining corps approval.
4. The number of airmobile operations and their effectiveness would be increased if the aviation company or companies were placed under operational control of the senior division US advisor for a specified period. The advisor could then provide for the direct support of an ARVN division.
5. Planning must be kept to a minimum and SOP's employed to the maximum in order to reduce reaction time.
6. Procedures need to be standardized as much as possible and written plans and orders used only when necessary. However, such SOP's as are written should not restrict operations nor make them so stereotyped that all flexibility is lost.
7. A strong reserve is required in airmobile operations. This reserve force should be available for employment at any time during an airmobile operation.
8. Weather had no significant affect on airmobile operations during the evaluation.
9. All combat infantry-type units should be trained in airmobile operations, thereby providing the commander flexibility in selection of units to be employed.
10. Airmobile-trained units of platoon or company size should be positioned at the home airfield of the supporting aviation units to ensure immediate availability to counter enemy threats. These standby units provide additional airfield security when not on operations.
11. The airlift phase of airmobile operations employing US

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helicopters should be controlled by US commanders or US advisors.

12. The C&C helicopter manned with a command and control element, including a fire support coordinator, provides the most effective means of controlling an airmobile operation.

13. Weapons and equipment of the airmobile assault force should be as light as possible.

14. Re-location of troops by helicopter within the objective area is an effective technique which affords the commander the means of surprise and maneuver.

15. Considering the current enemy anti-aircraft capability, a safe flight altitude is 2000 to 3000 feet. If there is a significant increase in the VC anti-aircraft capability, other techniques will have to be employed.

16. The use of control and release points provides the aviation commander with a simple but effective means of controlling air movement.

17. For control and safety, aircraft required to orbit in the operational area should be assigned flight levels.

18. When possible, troops should be landed no further than 400 meters from their initial objective. This is normally close enough for an assault and approaches the maximum effective range of most VC small arms fire. Consideration must be given to the fact that in rice paddies or in areas of numerous canals, 400 meters may be too great a distance. An alternative to this would be the use of an effective smoke screen. Wind and terrain permitting, the flight should land parallel to the objective, permitting the troops to form a skirmish line rapidly.

19. Two US advisors equipped with AN/PRC-25 radios should accompany each airlifted unit and should ride in different helicopters. One advisor should ride with the unit commander for the purpose of relaying information and instructions from the C&C helicopter.

20. For security reasons, troop movement in advance of an operation must be held to a minimum. Deceptive moves should be made to prevent establishing a pattern.

21. Armed helicopters are essential to the conduct of airmobile operations.

22. Tactical US close air support is more effective when directed by USAF FAC's than by VNAF FAC's. On all joint operations it is desirable that both USAF and VNAF FAC's fly in the same aircraft. This would enhance coordination and reduce or eliminate control problems and misunderstandings attributed to language difficulties. It should also provide the command and control element positive control of all

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support aircraft during the assault phase of airmobile operations.

23. A very effective pre-strike technique is for fighter aircraft to bomb and strafe the LZ and adjacent areas shortly before the arrival of the airmobile force and to continue to strike areas adjacent to the LZ while the transport helicopters land.

24. Armed helicopters should be used to suppress the area between the LZ and the fighter strike area, but should not be used on targets which are better suited for artillery or fighter/bomber aircraft.

25. When tactically desirable, smoke should be used to screen the landing zone.

26. The use of riot control agents in areas and villages likely to contain VC should be considered.

27. The use of airstrikes conducted well in advance of operations is likely to compromise the operation. The commander should carefully weigh the results of these strikes against the loss of the element of surprise. When alerted to an operation, the VC have the choice of withdrawing from the area or preparing an ambush.

28. During the period of the evaluation personnel on the ground felt that the A-1E/H was better suited to the close air support roles in counterinsurgency in Vietnam than the jet fighter aircraft. The jets are effective in the pre-strike role and for quick response to distant targets.

29. The ground commander should consider the use of ground alert rather than continuous overhead air cover when the time for ground alert aircraft to reach the operational area is acceptable. Jet aircraft are more responsive from ground alert.

30. During the airmobile assault, all fire support means allocated to the operation should be under centralized control.

31. Procedures to integrate armed helicopter, artillery, and close air support should be standardized.

32. Logistical support procedures as established are adequate to support ARVN airmobile operations. The practice, however, of individual soldiers being required to take the time to procure and prepare food in the objective area during an engagement distracts from the soldier's primary mission and has, at times, jeopardized the success of the operation.

33. Medical evacuation is most responsive when helicopters are on station during the airmobile operation.

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B. RECOMMENDATIONS

It is recommended that:

1. The intelligence efforts of all US and Vietnamese agencies be intensified and directed toward providing ARVN division commanders with current intelligence information about the location and movement of VC units within their respective areas of responsibility.
2. Emphasis be placed on conducting rapidly planned and executed operations in response to specific VC threats rather than deliberately planned airmobile operations employing large ground maneuver forces.
3. Counterintelligence measures be intensified to prevent the compromise of airmobile operations.
4. When sufficient helicopter companies are available in RVN to place them in direct support of an ARVN division, the Republic of Vietnam Armed Forces High Command be advised to direct ARVN corps commanders to establish procedures whereby division commanders can plan and conduct airmobile operations without requiring corps approval for each operation.
5. For specified periods one or more aviation companies under the operational control of the senior US division advisor be placed in direct support of each ARVN division, and that this company be augmented with sufficient armed helicopters to support the division's airmobile operations.
6. Vietnamese division commanders be advised to train all combat infantry-type units in airmobile procedures to act as quick reaction forces.
7. Trained airmobile units be positioned on a standby basis at the home airfield of the aviation unit that normally supports the division.
8. Vietnamese division commanders be advised to provide for a strong reserve force during airmobile operations.
9. All airlift phases of airmobile operations employing US helicopters and ARVN troops continue to be controlled by US commanders or US advisors.
10. A command element in a C&C helicopter be used to control airmobile operations.
11. Vietnamese division commanders be advised of the technique of relocating troops within the objective area by helicopter and that aviation companies and ARVN troops be jointly trained in this technique.

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12. Two US advisors accompany each airlifted unit and be equipped with an AN/PRC-25 radio for relay of instructions from the command element.
13. Armed helicopters not be used on targets more appropriate for other available fire support means.
14. Since both armed helicopters and strike aircraft have essential and complimentary parts to play in airmobile operations, their integrated use be continued.
15. Vietnamese commanders, in order to achieve maximum surprise, be advised to consider the use of pre-strikes just prior to an operation rather than hours or days before.
16. Landing zones be located 400 meters from a tree line or initial objective when the terrain is fairly solid and level, or as an alternative, smoke be used to screen the airmobile force.
17. Non-toxic riot control agents, rather than conventional ordnance, be used to pre-strike villages and areas that are likely to contain VC.
18. Propeller driven fighters be provided for close air support of airmobile operations rather than jet aircraft.
19. For strike aircraft, ground alert with jet aircraft rather than continuous air cover be used when the reaction time to the objective area is acceptable.
20. On joint operations, a VNAF and USAF FAC fly in the same aircraft, and that the USAF FAC control all tactical US close air support.
21. During an airmobile assault, all fire support means allocated to the operation be placed under centralized control, and procedures be established to integrate all available fires.
22. Vietnamese division commanders take action to provide their airmobile forces with the approved Vietnamese combat ration, and that the practice of procuring food and taking long meal breaks during an airmobile operation be discontinued.

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(C) ANNEX A

21st DIVISION AIRMOBILE OPERATIONS

1. INTRODUCTION

This annex documents airmobile operations conducted by the 21st ARVN Infantry Division from 22 January through 24 February 1965. The information presented was collected by evaluators who observed all phases of the operations, interviewed key participating personnel, both US and ARVN, and studied records pertaining to the operations.

a. Physical Environment

The 21st Infantry Division conducted operations within the IV Corps Tactical Zone area known as the 42d division tactical area (DTA), as shown in figure A-1. Locations of the five operations documented during the evaluation are shown in figure A-2. Operations in this division were numbered and preceded by the code words Dan Chi, meaning "Peoples' Will".

(1) Terrain

The 42d DTA, composed of the five southernmost provinces in the RVN (figure A-2), is characterized by a flat, poorly drained, highly dissected surface criss-crossed by an intricate network of canals and smaller streams. Most of the area consists of rice paddies. Near the coasts are mangrove swamps and forested areas that provide natural cover and concealment for the VC.

By February of each year much of the rice in the area has been harvested, the rice paddies are relatively dry, and there is good trafficability throughout the open area.

(2) Climate and Weather

January and February are dry months in the 42d DTA. As a result of the northeast monsoon season which occurs from November to mid-March, wind flow is from the north and northeast.

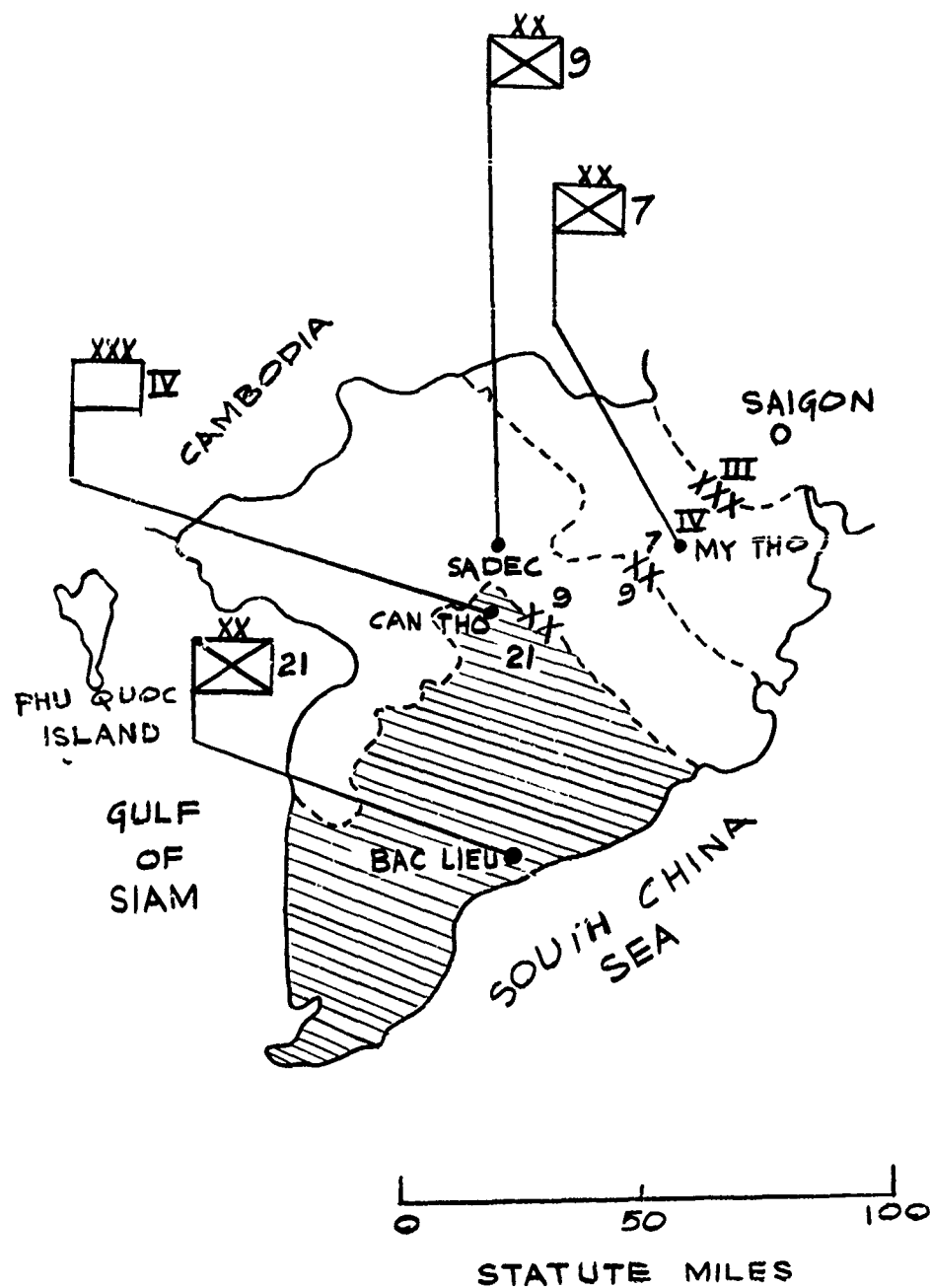
The average maximum temperature for the January-February period is 87 degrees Fahrenheit. The average minimum is 71 degrees Fahrenheit. Average humidity is 80 percent.

b. Military Elements

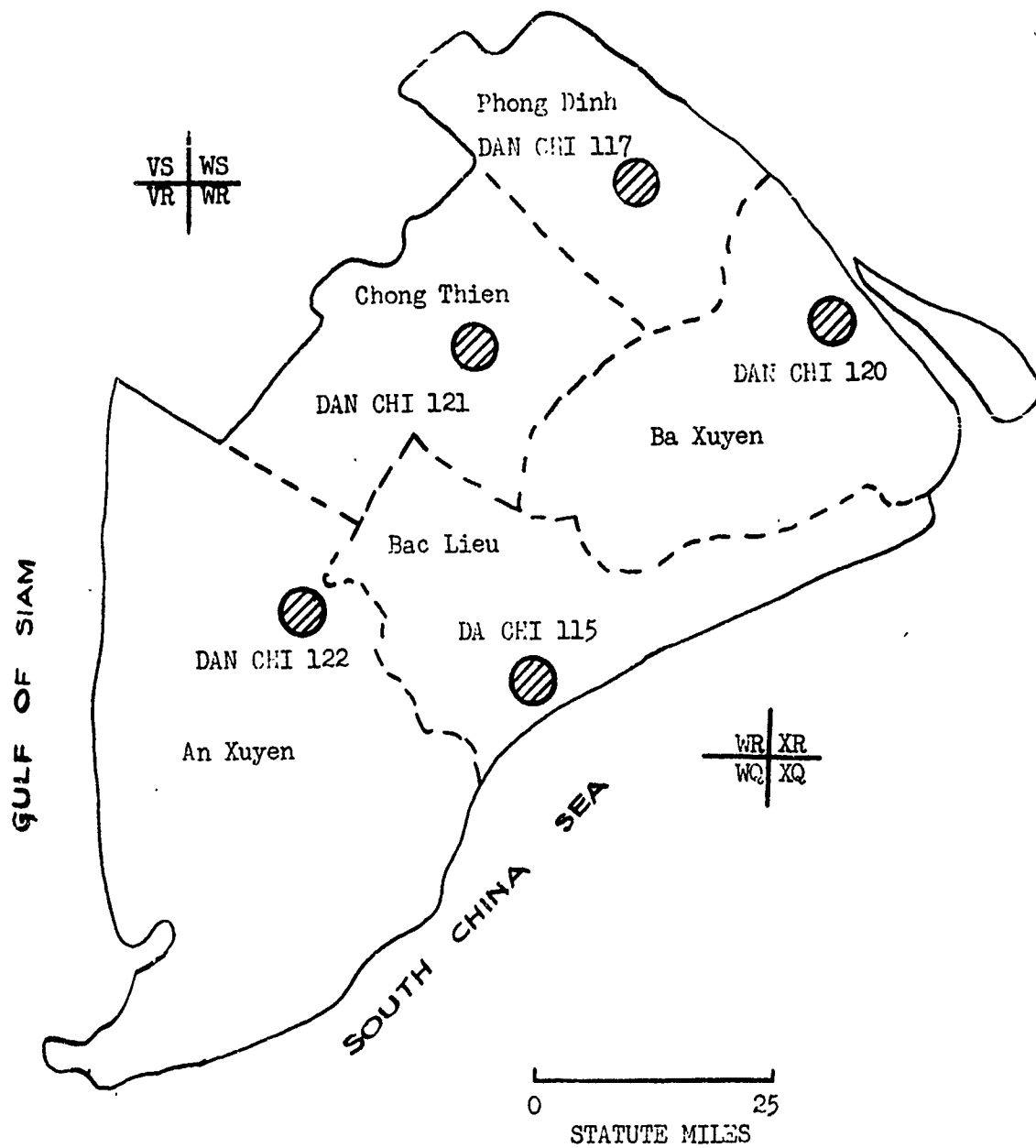
(1) ARVN Units

The command relationship of the 21st Infantry Division

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(U) FIGURE A-1. IV Corps tactical zone with the 21st Infantry Division area of responsibility shaded.



(U) FIGURE A-2. 42d division tactical area and locations of 21st Division operations documented during the evaluation.

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and supporting units is shown in figure A-3.

The 21st Infantry Division, consisting of three infantry regiments and supporting units, was deployed in the 42d DTA as shown in figure A-4.

(2) US Aviation Units

The 13th US Aviation Battalion, with headquarters at Can Tho, provided aviation support to the IV ARVN Corps. The battalion was composed of the 121st Aviation Company (Airmobile) located at Soc Trang and the 114th Aviation Company (Airmobile) and Company A, 502d Aviation Battalion located at Vinh Long. The 121st Aviation Company normally supported the 21st ARVN Infantry Division. The composition of the 121st Aviation Company is shown in figure A-5.

(3) General Insurgent Situation

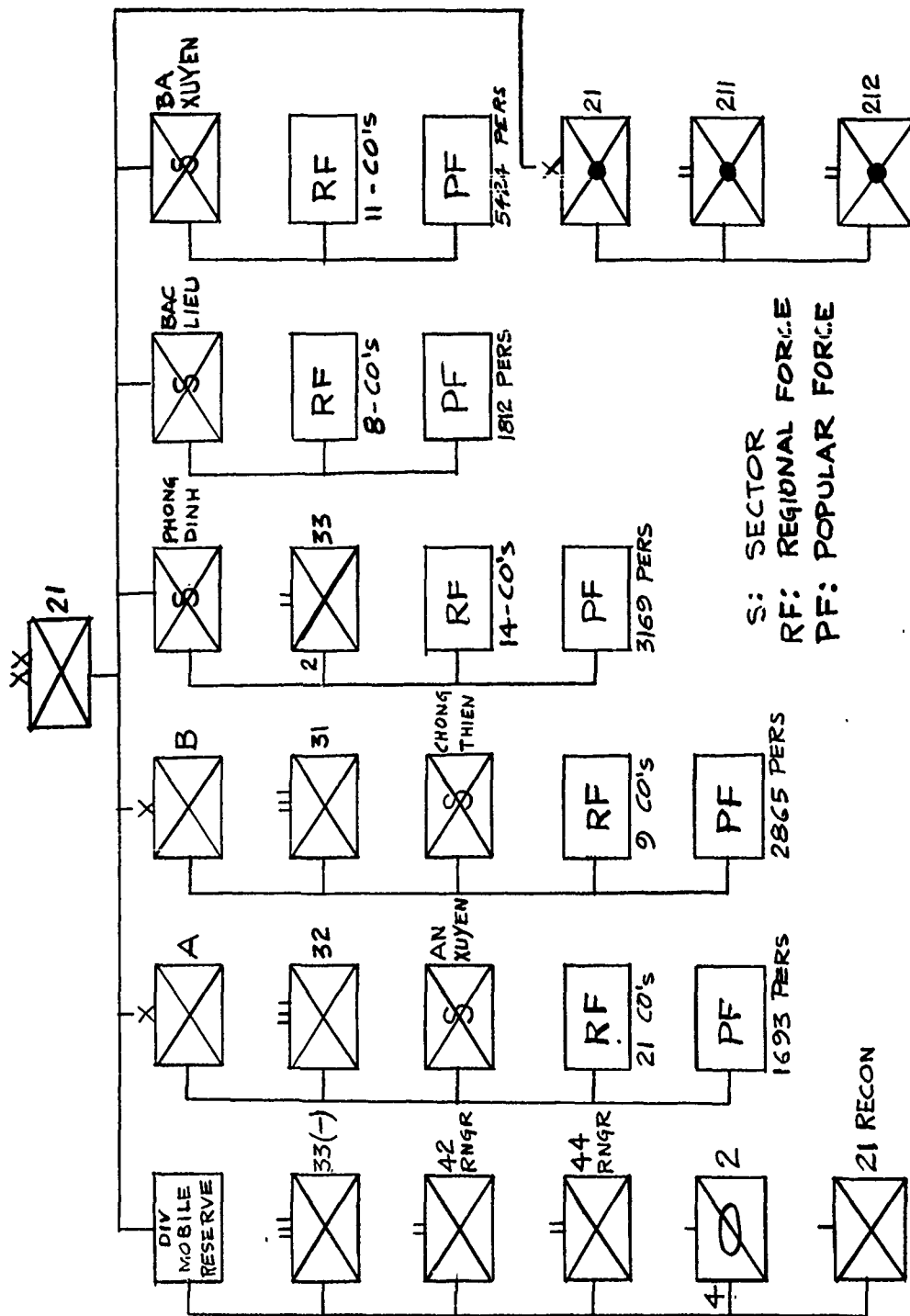
The Viet Cong (VC) order of battle in the 42d DTA was reported by the G2 advisor, 21st Infantry Division to have consisted on 15 November 1964 of the following units and strengths:

<u>Unit</u>	<u>Total Strength</u>
1 Delta regimental headquarters	100
3 Main force battalions	2,350
4 Local force battalions	2,280
23 Local force companies	2,180
170 Village/hamlet squads/platoons	<u>5,100</u>
	12,010

Analysis of information by the G2 section, 21st Infantry Division indicated that by 1 February 1965 the VC had changed their operational control of main force units. It was suspected that the VC had increased the number of regiments and battalions by sub-dividing some of the original battalions that contained a large number of personnel. The new organization appeared to consist of three regimental task forces of three battalions each. There was no apparent increase in the number of VC personnel in the zone.

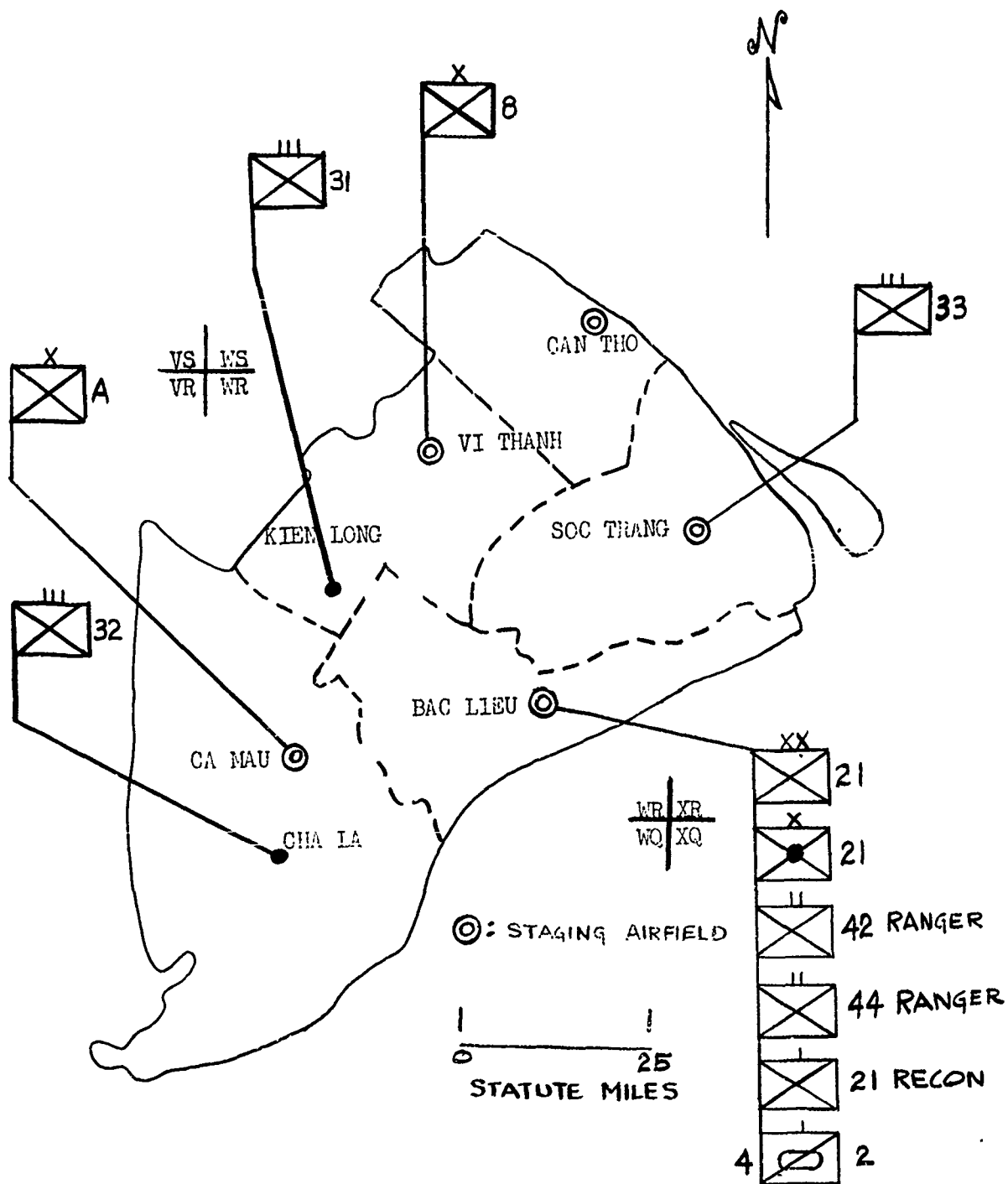
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(C) FIGURE A-3. Command relationships in the 42d DTA.

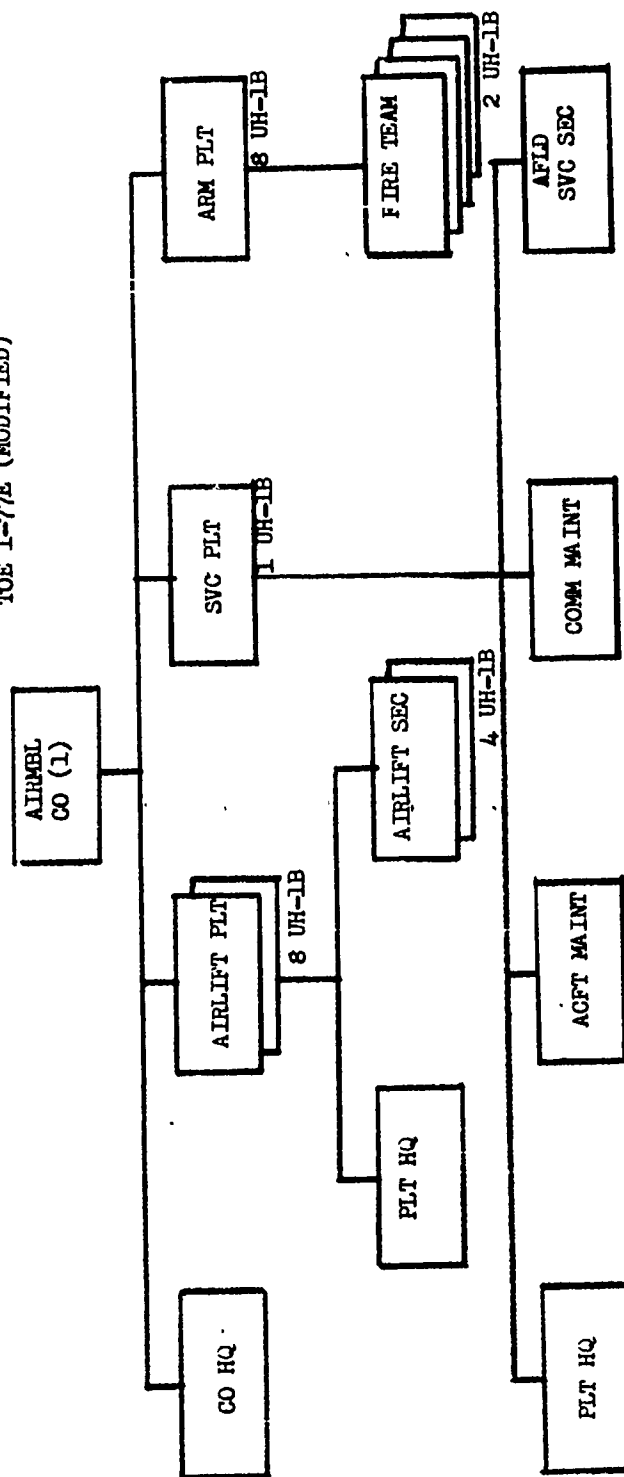
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(U) FIGURE A-4. Locations of major elements of the 21st ARVN Infantry Division.

AIRMOBILE COMPANY (LIGHT)
AVIATION BATTALION, AIRMOBILE
VIETNAM

TOE 1-77E (MODIFIED)



(U) FIGURE A-5. Organizational chart for the 121st Aviation Company.

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2. DISCUSSION

a. Command and Staff Planning Procedures

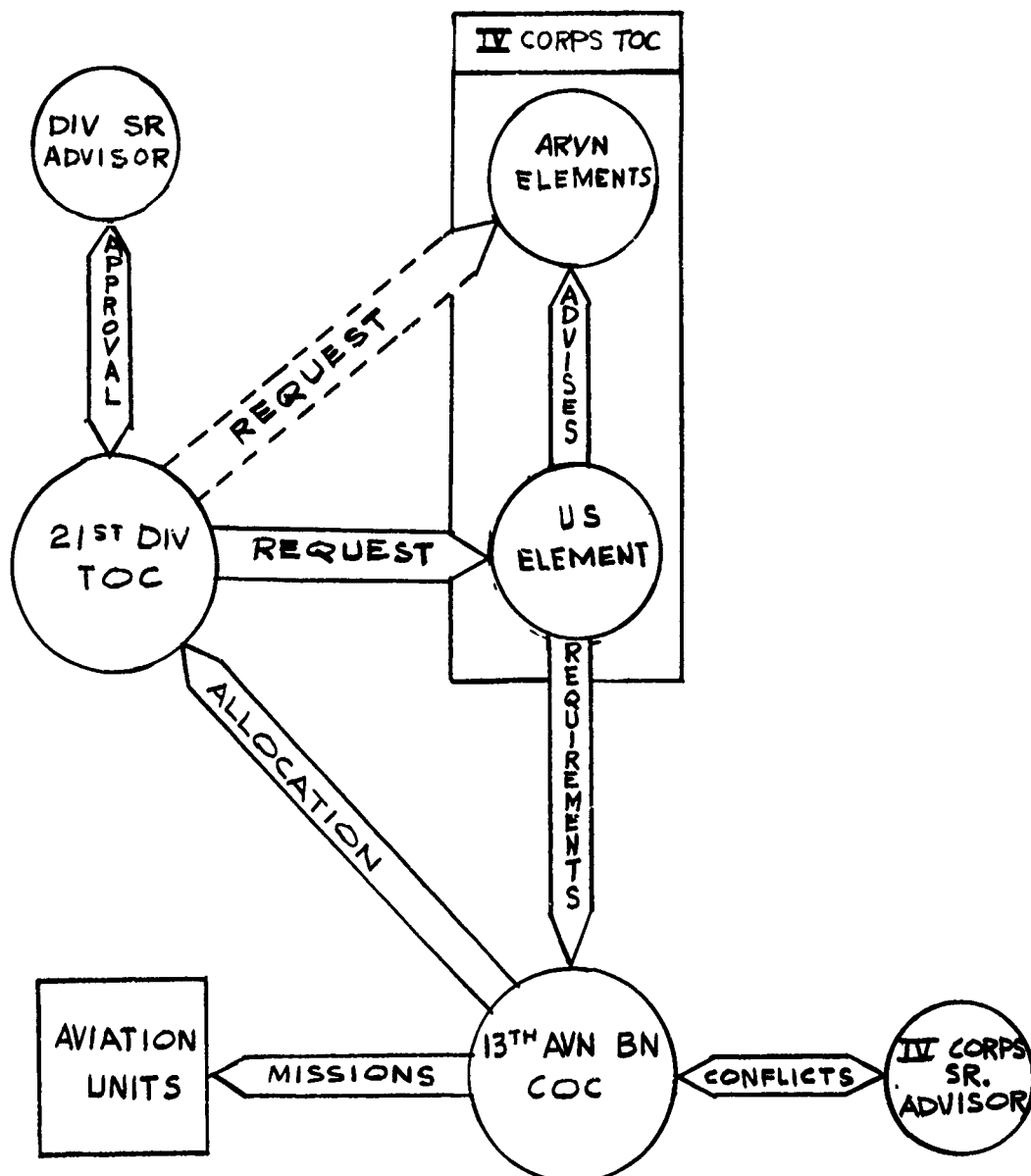
During the evaluation, the mission of the 21st ARVN Infantry Division was to find and close with the enemy in order to capture or destroy him, to repel an enemy assault by fire or close combat, and to assist the provincial government in pacification operations. Pursuant to the mission of closing with the enemy in order to capture or destroy him, numerous airmobile operations were planned and conducted by the 21st Division. The decision to begin planning for an operation involving airmobile forces was usually triggered by intelligence concerning the location of VC units.

Because the division senior advisor was an approving authority on requests for US Army aviation support, US advisors influenced the planning for airmobile operations. Degree of influence was evidenced by the close coordination effected between the ARVN staffs and their US advisors in each of the airmobile operations documented during the evaluation.

Helicopter request channels for the 21st Division are shown in figure A-6. The request procedure was as follows:

- 1) The ARVN division tactical operations center (DTOC) established the need for a specified number of helicopters. The division senior advisor approved use of the helicopters.
- 2) A formal request was sent via US channels by the G3 advisor (DTOC) directly to the IV Corps Tactical Operations Center (CTOC) officer (US) on duty. A parallel request was submitted through ARVN channels by the G4 air. All requests from within the IV Corps were usually consolidated by 1620 hours each day. Priorities were assigned and allocations were determined as soon as possible.
- 3) The aircraft requirements were passed from the US officer on duty within the CTOC to the combat operations center (COC) of the 13th Aviation Battalion located at the CTOC. Aircraft availabilities were compared against requirements and mission assignments were made in accordance with IV Corps priorities. When availabilities were less than requirements, the IV Corps senior advisor resolved the conflicts.
- 4) Mission assignments were passed directly to the individual aviation companies by the COC.
- 5) The 21st Division was informed of the aircraft allocations by the COC.

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(U) FIGURE A-6. Helicopter request channels.

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For most 21st Division airmobile operations, the G3 advisor or his representative alerted the CTOC when an operation was being planned that would require helicopter support. This was done in advance of the formal request and greatly assisted the corps in planning for helicopter support. Also, since the 121st Aviation Company habitually supported the 21st Division, the 13th Aviation Battalion liaison officer to the 21st Division alerted the 121st Aviation Company of any forthcoming operations involving the use of helicopters. This alert prior to official notification of an operation from COC gave the company more time to prepare for an operation.

Three of the operations involving airmobile forces employed ground maneuver forces in search and clear operations. Airmobile forces for these operations were employed in a blocking or reaction role. On one of these operations, Dan Chi 121, a battalion was heli-lifted to the operational area to participate in the ground maneuver plan. Planning for these three operations was deliberate and complete. Units received timely warning orders. Written operations orders were issued and all participating unit commanders and staffs were adequately briefed.

Operation Dan Chi 120 was planned for one area. Then, on D-day minus one, the division commander decided to change the operational area because of updated intelligence. This necessitated rapid planning on the part of the division staff, which was accomplished in an efficient and effective manner.

Operation Dan Chi 115, a hastily planned operation triggered by timely intelligence, employed a heli-lifted ranger battalion. Planning for this operation was brief, rapid, and complete. The fact that well-trained, experienced units were involved greatly facilitated planning and reduced the briefing time.

Normally, no detailed loading, air movement, or landing plans were prepared for 21st Division airmobile operations. That these phases of the operations could be efficiently accomplished without detailed planning emphasized the value of well-trained airmobile forces.

b. Organization for Combat

The division commander's concept of military operations during the evaluation was to conduct large scale operations in each of the five provinces. As a result of this concept, four of the five operations evaluated included a ground maneuver force equal to four or five battalions and a planned airmobile force of two to four battalions. One objective of the commander's concept, a "show of force" operation in each province, was accomplished but, based on the lack of significant VC contact on these operations, pre-operation movement to the vicinity of the operations area of such a large force probably contributed to the compromise of the operation. As a result of the commander's desires to conduct "show of force"

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operations, the committed ARVN forces always had at least a four to one personnel advantage and superior supporting fires over the suspected VC force.

Because of the dispersion of the infantry regiments (figure A-4) and their varied missions such as operating training centers, manning security installations, and convoy duty, it was not always possible or feasible to employ these units as an airmobile force. Therefore, the division commander required three units of the division reserve to undergo extensive training in airmobile operations. These units were the 42d Ranger Battalion, the 44th Ranger Battalion, and the 21st Reconnaissance Company. They had participated in many airmobile operations and were normally the only units in the 21st Division that were used as airmobile troops. The two ranger battalions were alternately employed as the heli-lifted force.

During the evaluation, the division employed the 3d Battalion, 33d Infantry Regiment as an airmobile force on the two operations. This unit had received limited airmobile training with helicopters prior to their first operation. Although loading and unloading procedures in the first operation were satisfactory, it was apparent that the unit required additional training in tactical and control procedures to be used in the objective area.

Following Dan Chi 120, the 3d Battalion, 33d Infantry Regiment underwent extensive training in airmobile tactics and control procedures. The result of this training was evident in Dan Chi 121 as the battalion performed its airmobile mission in a manner that could be expected of seasoned units. The battalion was landed in four different landing zones. Coordination and control procedures had been worked out prior to the operation and all went according to plan.

c. Command and Control

From the onset of airmobile operations in the 42d DTA and continuing through the evaluation period, it was the policy of the 21st Infantry Division that all units participating in an airmobile operation were under the direct control of division headquarters. The division staff and the units normally equipped as the heli-lifted forces had worked together as a team on numerous airmobile operations and had been able to reduce many planning and execution aspects of an airmobile operation to standing operating procedures. The use of the same control headquarters and staff eliminated, or reduced to a minimum, the liaison and coordination which would have been necessary had a regimental or sector headquarters been used as the controlling headquarters.

The airmobile phase of these operations was US directed and controlled. Selection of the landing zone (LZ), control of the aircraft and airspace over the operational area, landing and pickup of troops, fire support, re-supply, and medical evacuation by helicopter were controlled

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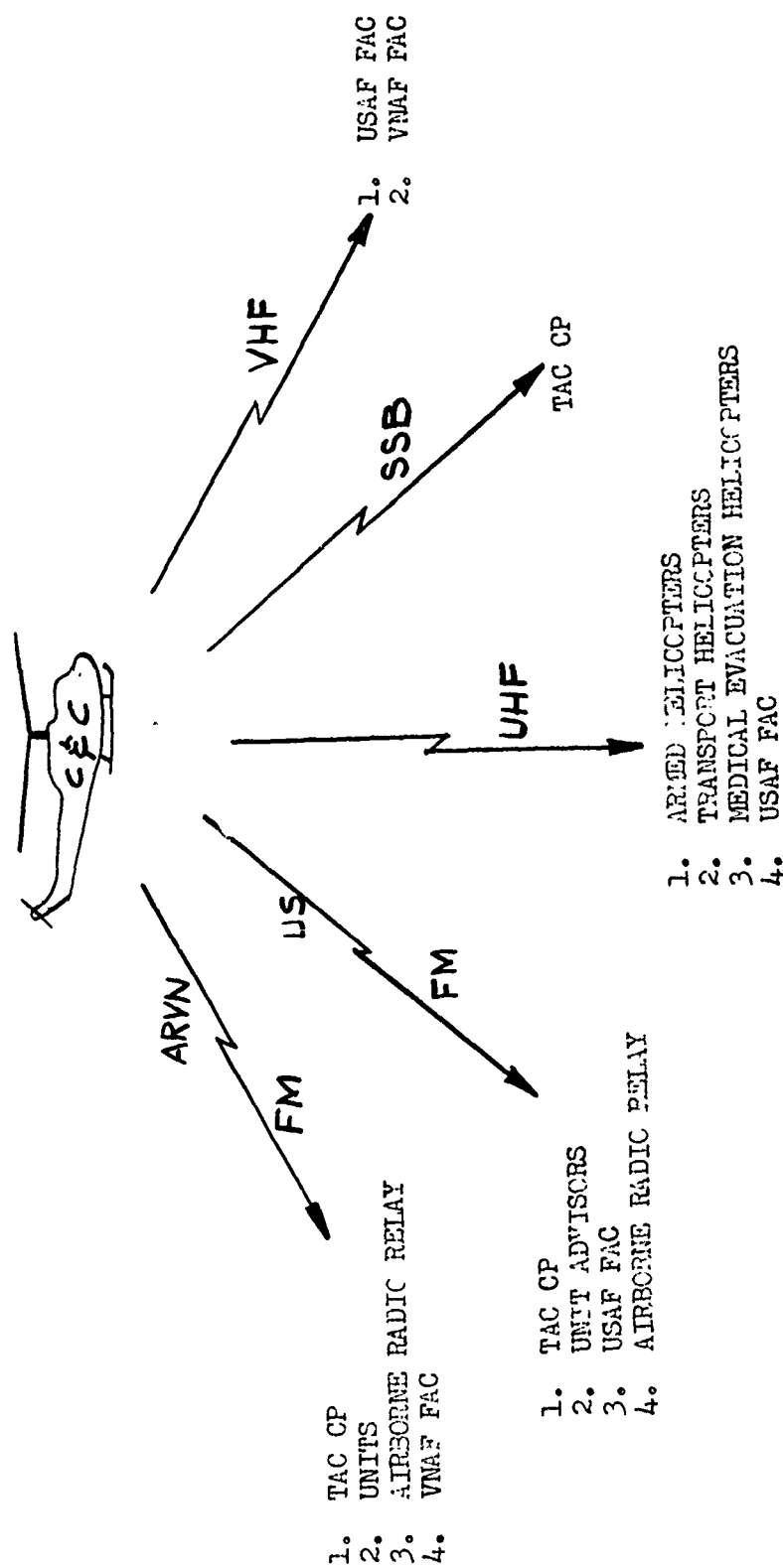
by either the senior US advisor assisted by the aviation company commander, or the G3 advisor assisted by an officer from the aviation company. This was done with the concurrence of the 21st Division commander. Both he and the senior US advisor believed that airmobile operations worked most effectively when controlled by experienced US officers.

In each operation evaluated the division established a tactical command post (TAC CP) adjacent to the staging airfield. This CP was staffed with the appropriate personnel (command group, G2, G3, G4, signal officer, and fire support element) and communication equipment to control the operation.

Often when the ground maneuver phase began, and during the airmobile phase, the control element was airborne in a command and control (C&C) helicopter. This control element usually consisted of the division commander, the senior US advisor, and the signal advisor. The helicopter, flown by the aviation company commander, contained a communications console consisting of two FM radios, one UHF radio, one single side band radio, one VHF radio, and an intercom system. These radios allowed the members of the control element to communicate with each other and the pilot over the intercom system; the ARVN commander to communicate by FM with his commanders on the ground, the ARVN TAC CP, the ARVN airborne radio relay, and the VNAF FAC; and the senior US advisor to communicate with his advisors on the ground (FM), the advisor TAC CP (FM/UHF), the advisor airborne radio relay (FM), and the US FAC (VHF), and also to monitor the transmissions of the armed and airlift platoons (UHF) (figure A-7). When the C&C helicopter was not airborne, a second control helicopter normally containing the ARVN G3 and his US advisor, was airborne over the objective area for the purpose of controlling the operation. The second C&C helicopter did not contain a communication console and, as a result, all orders had to be relayed by the pilot or copilot to the US advisor on the ground and, in turn, relayed to the ARVN ground commander by the advisor. Although this system of communication was effective in the operations evaluated, the installation of a console in the second C&C helicopter would have increased communication capabilities with a resultant increase in responsiveness and effectiveness. Each C&C helicopter had sufficient fuel to remain airborne approximately 2 hours.

The US advisor TAC CP, located adjacent to the ARVN TAC CP, was normally staffed with the G2 advisor, the TOC advisor, the G4 advisor, the signal advisor (when not airborne), the artillery advisor, the ALO, and the army aviation liaison officer. On four of the five operations, two FM and one UHF radio sets were installed in the CP. This provided communication with the C&C helicopter, the committed unit advisors, the airborne radio relay, the USAF FAC, the armed and transport helicopter platoons, and the medical evacuation helicopter. Communications were instantaneous and effective.

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(U) FIGURE A-7. Command and control helicopter communications in the 21st Division.

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On Operation Dan Chi 122, the advisor and ARVN TAC CP was located approximately three-fourths of a mile from the staging airfield in the An Xuyen sector TOC. Installed communications provided the ARVN control element with sufficient means to communicate with and control each committed element. Initially, the advisor control group had only one FM radio (an AN/PRC-10) and no UHF radio. The second FM radio (an AN/PRC-25) was being transported to Ca Mau on the C&C helicopter. The C&C helicopter, instead of flying directly from Bac Lieu to Ca Mau, orbited the operation area for approximately one and one-half hours. The only UHF radio available in Ca Mau was installed at the advisory team house, some distance from the TAC CP. This necessitated all UHF transmissions to be relayed by telephone between the team house and the CP. This, combined with the lack of control personnel and communications at the staging airfield, resulted in a delay in responsiveness and communication. In the four operations in which the TAC CP was at the staging airfield, communication was rapid, reaction was immediate and responsive, and control was effective.

For effective employment of airmobile forces, it was imperative that advisor personnel be equipped with the most reliable and capable communications system available. The AN/PRC-10 radio authorized the 21st Division unit advisors was inadequate for control because of its limited power. On most airmobile operations, some of the unit advisors used AN/PRC-25 radios which they borrowed from the division ALO. These radios proved to be more effective than the AN/PRC-10.

d. Tactics, Techniques, and Procedures

(1) Loading

At the time of the evaluation, the usual practice for employing airmobile forces was to position one of the units at one of the five staging fields in the 42d DTA (figure A-4) and then to airlift 80 troops from that unit in 10 transport helicopters as an initial lift. The remainder of the unit was moved in subsequent increments as the tactical plan or situation dictated.

Each transport helicopter carried an 8-man ARVN squad as a normal assault load. This 8-man load, with its individual and organizational equipment (weapons, radio, etc) did not exceed the maximum operating weight of the aircraft (8500 pounds). The 80 combat troops carried by the 10 transport helicopters normally constituted the combat elements of a company and were commonly referred to as an eagle flight. Airlifted elements were divided into aircraft loads and positioned beside the helicopters as soon as possible after arrival of the troops and helicopters at the departure airfield.

This loading plan was simple, flexible, and met the requirements of both the supporting aviation unit and the airlifted unit. This plan was standard and did not require a written loading plan for each

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operation. Since manifests were not prepared, preparation time was reduced.

(2) Air Movement

The area between the departure airfield and the objective was always considered to be under VC control. A direct route from the departure airfield to the objective area was selected by the troop lift flight leader. Alternate routes were not planned because of the relatively short distances to the objective areas and the non-availability of known safe routes. Flights over densely wooded areas and tree lines were avoided because of the danger that anti-aircraft weapons might be concealed there. Prior to and during the evaluation period there was no known electronic detection equipment being used by the VC in the 42d DTA. Enemy detection capability by other means was not considered a factor because of the short flight times involved.

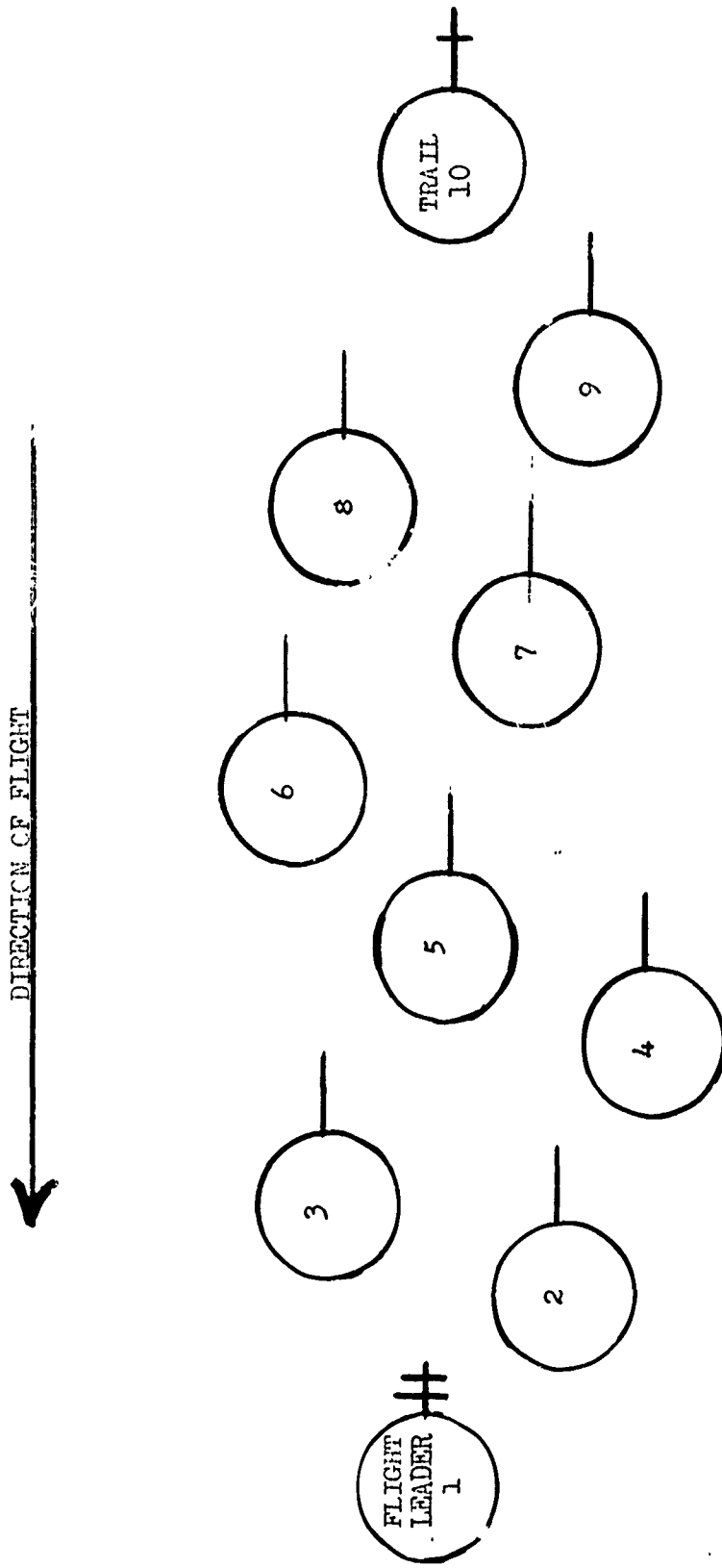
An enroute altitude of 3000 feet mean sea level (MSL) was normally flown to avoid ground fire. Enroute airspeed was 80 knots indicated. A modified staggered trail formation (figure A-8) was flown by the transport helicopters. No enroute aerial escort was used since distances to the objective area were short and the flight altitude was high.

In order to reduce the flight hazards involved in using different types of aircraft to perform varied tasks over the objective area, flight levels were assigned as shown in figure A-9.

(3) Landing

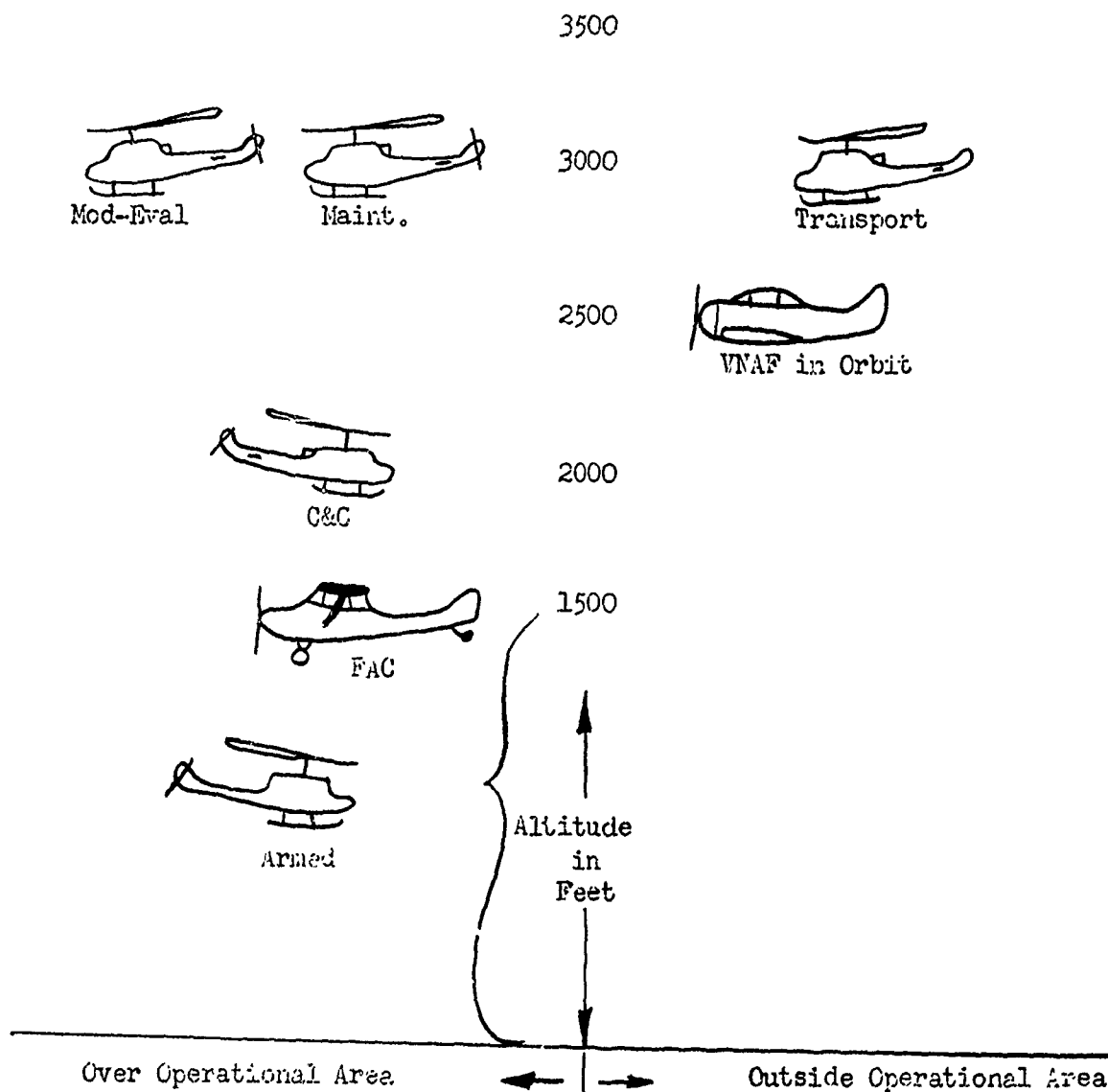
At a point approximately 3 to 5 kilometers from the proposed LZ, and at an altitude of 3000 feet, the troop-carrying helicopters began a gradual descent until they were 500 to 700 meters from the LZ's, where they were met by a fire team from the armed platoon. The armed platoon arrived in the objective area to perform a reconnaissance of the general area of the proposed LZ 10 to 15 minutes prior to the arrival of the first airlifted element. The fire teams placed themselves between the airlifted element and the known or suspected enemy positions and escorted the airlifted element into the LZ, placing suppressive fire on these positions. The actual LZ's were designated by the senior US advisor and the aviation company commander in the command and control helicopter and were marked with smoke by the armed platoon. Selection of suitable LZ's in the 42d DTA normally posed no problem. Invariably there were large clear paddy areas adjacent to the initial objective. During the evaluation the paddies were dry and firm and made excellent LZ's. The armed platoon commander selected the actual final approach flight path for the airlifted element because, having just reconnoitered the area, he was the person most familiar with the enemy situation. The final approach was preferably into the wind and not over wooded areas that might contain VC. The actual touchdown point of the lead transport helicopter

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(U) FIGURE A-3. Modified staggered trail formation.

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(C) FIGURE A-9. Flight levels assigned aircraft in support of airmobile operations.

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was determined by the pilot.

The modified staggered trail formation that was flown into the selected LZ was compatible with the ground maneuver plan. Upon leaving the aircraft, personnel immediately formed into a skirmish line and moved toward the area to be cleared. The landing plan did not normally contain the time or place of arrival of subsequent lifts. Units were usually committed on an "as needed" basis into landing zones selected just prior to the arrival of the airlifted force.

Landing zones used in the operations varied in distance between 400 and 1300 meters from the initial objectives. Four hundred meters placed the troops and helicopters beyond effective small arms fire.

(4) Tactics of the Committed Forces

The mission assigned to the heli-lifted force was either to search and clear an assigned area of VC or block the VC route of withdrawal from an area. Prior to this evaluation the tactics employed to accomplish these missions had been reduced to SOP. Since VC normally avoided open areas and usually moved along or on canals, the area to be cleared or the route of withdrawal to be blocked was always a heavily wooded area lining a canal.

The heli-lifted troop commander and his US advisor normally rode in the lead helicopter. The US advisor accompanied the heli-lifted unit to perform three functions: to advise his counterpart, to perform liaison between the control element in the C&C helicopter and his counterpart, and to act as a controller for the armed helicopter fire support. He was equipped with an FM radio to aid him in the latter two missions. Another US advisor accompanied the unit as an alternate in a separate helicopter in case the principal advisor became a casualty. The US advisor in the lead helicopter wore a head set during the flight and received ground maneuver instructions for his counterpart from the control group in the C&C helicopter. He relayed these instructions to his counterpart.

Wind direction permitting, the helicopter flight landed parallel to the tree line. This allowed the troops to come on line as rapidly as possible, giving them maximum firepower to the front.

Upon leaving the helicopters, the troops formed a skirmish line on the side of the helicopters nearest the tree line and began moving toward it. Leaders were closely watched for arm and hand signals. If the unit made contact with VC upon landing, an immediate assault was attempted with organic 60mm mortars and armed helicopters used for suppressive fires. If no hostile fire were received, the troops continued moving toward the tree line until they came within small arms range. At this point they began firing into the trees and increased their rate of movement until they reached the tree line.

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If the mission were to search and clear a portion of the woods, the unit turned whichever way they had been directed and began to search the area. If the mission were to block the VC route of withdrawal, the unit turned in the appropriate direction and established a blocking position.

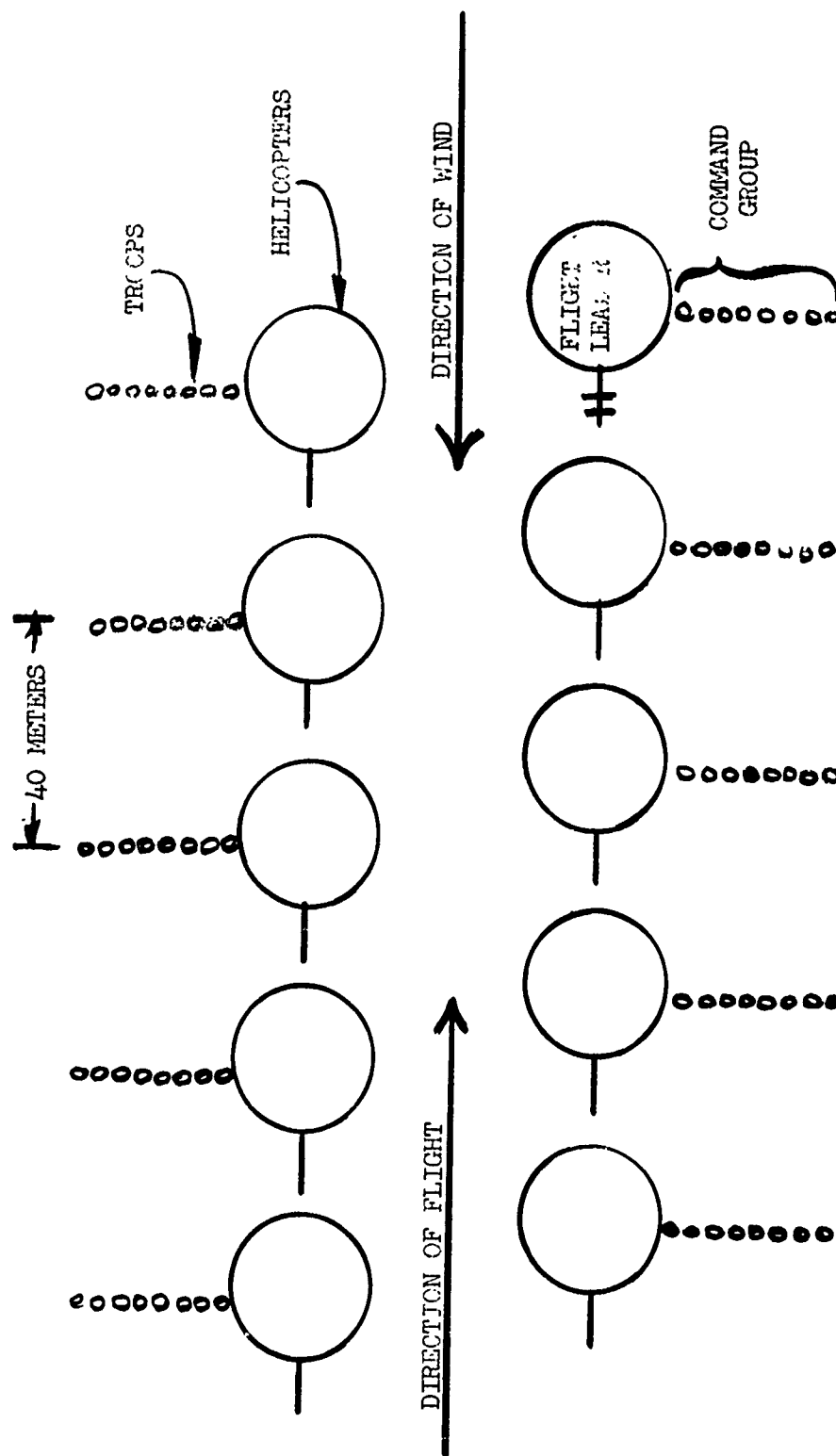
Communications within the unit on the ground were either by voice or a system of signals--whistles, bugles, or pyrotechnics. No heavy equipment such as packs and entrenching tools or heavy weapons were carried. Unless an extended operation had been planned, the troops carried only their weapons and ammunition. Small arms consisted of carbines, BAR's, M-1 rifles, M-79 grenade launchers, and submachineguns. The heaviest weapons used were light machineguns and 60mm mortars.

The ground tactics used were simple and effective. Planning at battalion and company level was minimal. Emphasis was on surprise, shock-action, and aggressiveness. Mobility and flexibility were maintained by re-positioning airlifted units already committed by means of field pickup of units by helicopter. These pickups were executed rapidly and efficiently. The pickup LZ was selected by the advisor on the ground and marked by him with smoke. No security forces were used. The LZ's were always selected in areas that had been cleared by the friendly troops and were considered safe. The troops to be picked up arranged themselves on each side of the LZ in five loads of eight men each (figure A-10) and, upon pickup, were flown either to a new objective or returned to the staging airfield.

On two operations, Dan Chi 120 and 121, the tactics varied from those of other operations. On both of these operations an entire infantry battalion, transported in several lifts, was committed against one objective. Twenty helicopters were employed on Dan Chi 120, which reduced the time required to transport the entire battalion but required a larger LZ. In Dan Chi 120 some problems were noted in employing an infantry battalion inexperienced in airmobile operations. The battalion commander had not been adequately briefed and started to unload his troops just before takeoff. This delayed the departure of the first lift. Also, the US advisor should have been in the same helicopter as his counterpart in order to relay orders from the C&C helicopter. The hesitancy to enter the woods, the subsequent delay to await the remainder of the battalion, and the failure of the second lift to move in the proper direction can also be attributed to a lack of airmobile experience.

The more successful employment of the same infantry battalion on Dan Chi 121 indicates that valuable experience was gained from Dan Chi 120.

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(U) FIGURE A-10. Field pickup of troops.

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e. Fire Support Means and Procedures

(1) Artillery

The 21st Division artillery consisted of two battalions of three firing batteries of 105mm howitzers each. Each firing battery was organized with three platoons of two 105mm howitzers. The platoons were widely dispersed in 1- or 2-howitzer static firing positions (figure A-11) to provide maximum artillery coverage for the 14,500 square kilometer division tactical area. These static firing positions were well-organized, each with its own fire direction and forward observer capability. The primary mission of the division artillery while employed in this manner was to provide fire support to secure the small towns, villages, and outposts within the range of the static firing positions. For these relatively isolated areas, artillery was the best means to ward off attacking Viet Cong. This was particularly true at night when the threat of attack or harassment by VC was considerably greater.

Although widely dispersed and under the decentralized control of the sector, the employment of artillery was considered and planned for each airmobile operation. Normal employment was by platoons. There were limitations and restrictions to physical displacement (i.e. lack of adequate road networks, need for security while displacing, limitations on the selection of suitable firing positions, wide dispersal of artillery units) but within these limitations, the artillery was displaced to support airmobile operations.

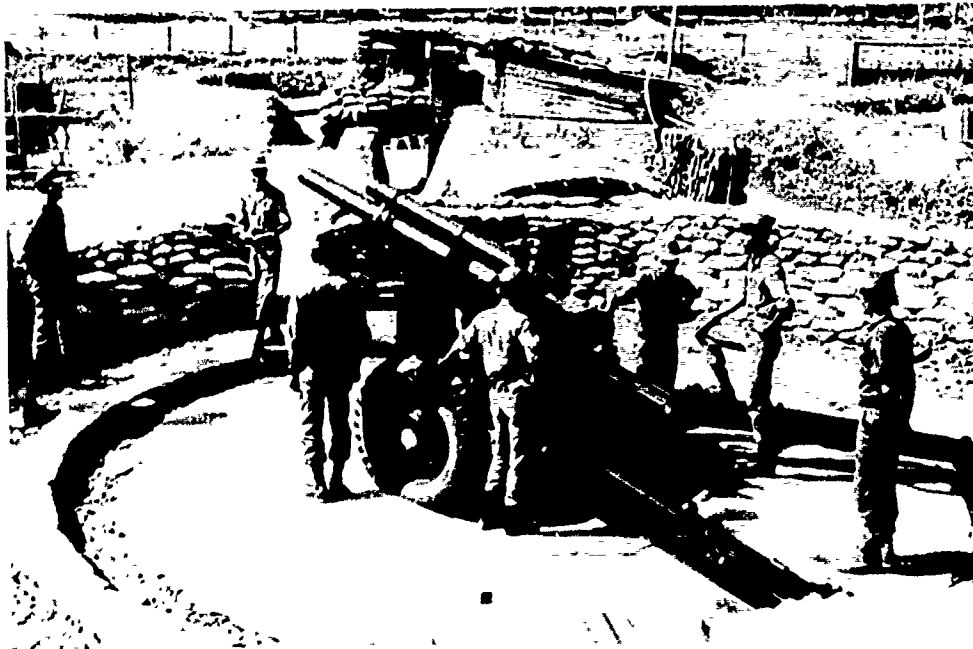
In planning the use of artillery to support an airmobile operation, the division artillery commander considered first those units in close proximity to the proposed operational area. When the commander felt that his organic artillery was inadequate to support an airmobile operation, a request for additional artillery was submitted to corps. There were several corps artillery units habitually located in firing positions within the 42d DFA.

Time permitting, the division artillery prepared a fire support plan for each airmobile operation. The fire support plan consisted of an overlay indicating the tactical operational plan and included operating units, axis of advance, objectives, landing zones, and artillery on-call target concentrations. The fire support plan was submitted to the division commander for approval prior to the day of the operation. The mission normally assigned to supporting artillery units was to provide direct support to specific units or task forces and to be prepared to revert to general support of all committed units on-order.

Prior to the start of an airmobile operation, a forward observer (FO) was provided each company of the division airmobile reserve force. The forward observers remained with these units throughout the operation and had the capability to transmit fire requests via radio

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(U) FIGURE A-11. Typical static howitzer position.

directly to the FDC located at the firing position. However, the fire support element, co-located with the tactical CP, included the division artillery commander or his representative who monitored the FO net and who was the final approving authority on all fire requests.

The amount of artillery coverage that could be provided during an airmobile operation depended upon the location selected for the commitment of the airmobile forces. Once artillery was positioned to support a particular area of operations, it was not displaced until the operation was terminated.

The type of ammunition available for support of these operations was WP and HE with a variety of fuzing which included fuze quick or delay, fuze time, and fuze controlled variable time (CVT).

Although artillery was available to provide supporting fires for each airmobile operation, artillery fires were requested only once and this request was denied by an aerial artillery observer who could not identify the target. The senior advisor with the 21st Division explained that artillery was not normally used during airmobile operations because after the troops were put down, the armed helicopters were depended upon for close and continuous fire support. The armed helicopters had proved to be much more responsive than artillery,

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especially for employment against fleeing or dispersing targets. On hard targets, VNAF or USAF fighter aircraft were normally employed, primarily because they were also more responsive than the artillery.

(2) Armed Helicopters

Conditions for employing armed helicopters were favorable in the 42d DTA. In the flat and relatively open country of the delta, armed helicopters provided the commander with a rapid and flexible means to find and to assist in destroying the VC. Most of the terrain was open rice paddy with a broad system of interlacing canals. Manmade structures above 15 feet in height and overhead wires, antennas, or any other hard-to-see obstructions that could be classified as fixed hazards to safe flight were almost non-existent within the operational area. Palm trees, which were found in groves along canals and attained heights of approximately 40 feet, were exceptions. Otherwise there were no obstructions of significance to affect the tactics or employment of the armed helicopters.

There were no armed helicopter units in direct support in the 42d DTA. There were, however, three aviation companies in general support of the IV Corps. They provided the required helicopter support for the three divisions of the corps. Organic to each of these aviation companies was one armed helicopter platoon. One aviation company, the 121st, was located at Soc Trang airfield. The armed helicopter platoon of this company normally supported the 21st Division airmobile operations. Most airmobile operations conducted by the 21st Division required two platoons of armed helicopters. The second platoon was usually provided from one of the other two airmobile companies. Since the platoons of the three companies were frequently employed in pairs, the mode of operation in support of airmobile forces was reasonably standard for all three platoons. Normally a committed armed helicopter platoon employed five of its eight armed helicopters to support an airmobile operation. This platoon of five helicopters usually consisted of two fire teams of two UH-1B's each armed with the M6-E3 armament system (four M-60 machineguns and two pods of six or seven 2.75-inch rockets) and one UH-1B armed with the XM-3 rocket system (two pods of twenty-four 2.75-inch rockets). This rocket helicopter was referred to as the "hog" and was normally flown by the armed platoon commander.

The tasks which were performed by the armed helicopters while in support of 21st Division operations were many and varied. Prior to the commitment of heli-lifted forces, the armed helicopters performed reconnaissance for the command and control element. Flying at treetop level, the armed helicopters purposely attempted to draw fire from VC on the ground. When ground fire was received, the location from which the fire was received was marked from the air with a smoke grenade for further investigation. The armed helicopters reconnoitered either visually or by fire and reported sightings of military significance to the command and control element in the C&C helicopter.

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Visual reconnaissance began with an approach flown at an altitude between 1000 to 1500 feet in a trail formation with the platoon commander leading his two fire teams. Upon reaching the area, the platoon commander identified a starting point, a flight route, and a termination point for the reconnaissance. He orally described the reconnaissance plan to the two fire teams, made certain that the fire team leaders fully understood his instructions, and then dispatched one or both of the fire teams to conduct the actual reconnaissance. The platoon commander remained at approximately 1000 feet to maintain visual contact and to direct the efforts of the fire teams. The fire teams descended to an altitude less than 100 feet above the terrain and performed the visual reconnaissance. Target intelligence was relayed to the command and control element from the fire teams through the armed helicopter platoon commander.

Reconnaissance by fire was authorized by the ARVN control element in the C&C helicopter. The technique of this reconnaissance began with the armed platoon commander's employing one or both of his fire teams to make firing passes on suspected areas in an effort to cause VC units to disclose their locations and strength. Firing passes were started approximately 1000 meters from the target area at an altitude of approximately 100 feet. As soon as the lead helicopter completed its firing pass, the fire was immediately taken up by the trailing helicopter. The firing pass was terminated by an abrupt break to the left or right at 100 to 200 meters from the target and at an altitude of less than 100 feet (figure A-12). The door gunner on the side opposite to the direction of the break continued to suppress the target area.

The target definition provided by either visual reconnaissance or reconnaissance by fire became a basis for the commander's decision to employ airmobile forces. Once the commander decided to employ airmobile forces, the armed helicopters continued to reconnoiter and were frequently used at this time to engage targets with pin-point or suppressive fires.

The armed helicopters normally remained in the immediate operational area to reconnoiter the landing zones and adjacent areas that could be used by VC to deny the use of the LZ to the airmobile force. The LZ itself was closely scrutinized.

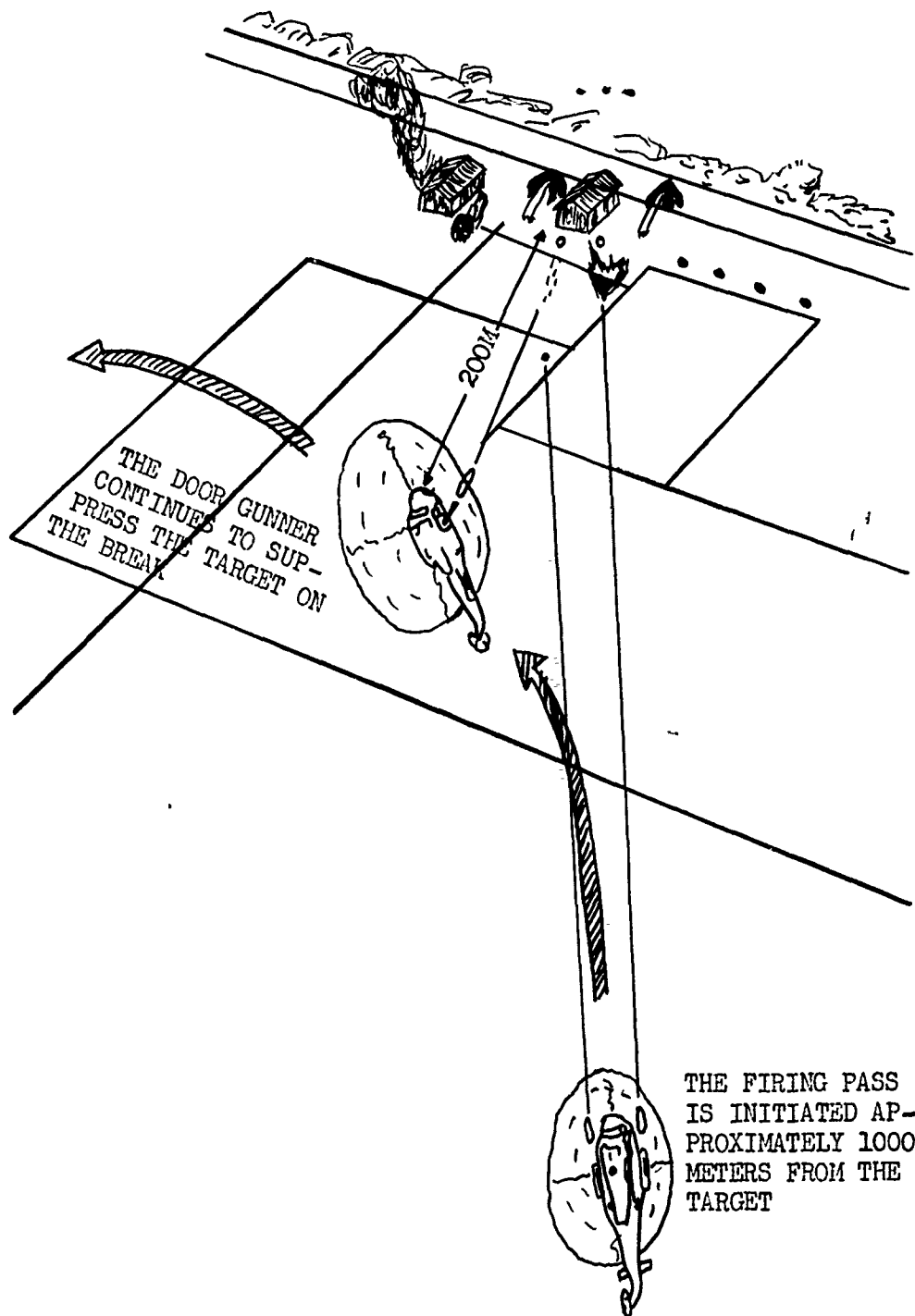
When the armed platoon commander was satisfied that the LZ was clear, he reported this to the command and control element and prepared to escort the airlift elements into the LZ.

The escort mission was important to the transport helicopters. It was the armed helicopter pilots who had developed the target and were most knowledgeable about the hazards which existed in the vicinity of the landing zone. The armed platoon commander used VHF radio to

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(U) FIGURE A-12. Armed helicopter firing pass.

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brief the pilot of the lead transport helicopter on the route to be followed into and out of the LZ. One fire team leader marked the LZ with smoke for positive identification for the transport flight. The actual armed escort was initiated on the final approach approximately 600 meters from the LZ. Normally, escort was accomplished by placing a fire team on both flanks approximately 50 meters outside and slightly to the rear of the formation. The timing of the escort was extremely important. By initiating the escort from slightly to the rear, the fire teams were able to maintain a constant airspeed that would put them abreast of the transport helicopters as the latter reduced airspeed in order to land in the LZ (figure A-13). When the transport helicopters departed from the LZ, the armed helicopters continued to cover the flanks of the formation until the formation was clear of the immediate operational area and above the range of small arms fire.

Once the airmobile forces were committed on the ground, the armed helicopters normally continued reconnaissance to the front and flanks of the committed forces until the operation terminated. While performing as protective cover, the armed helicopters delivered close-in supporting fires, both suppressive and pin-point, on targets of opportunity. Each armed platoon had the capability to remain airborne for approximately $1\frac{1}{2}$ hours.

Often upon termination of an airmobile operation, committed airmobile forces were heli-lifted from the operational area to the staging airfield. The armed helicopters provided reconnaissance and security for the troops awaiting pickup. They also escorted the transport helicopters into and out of the pickup LZ.

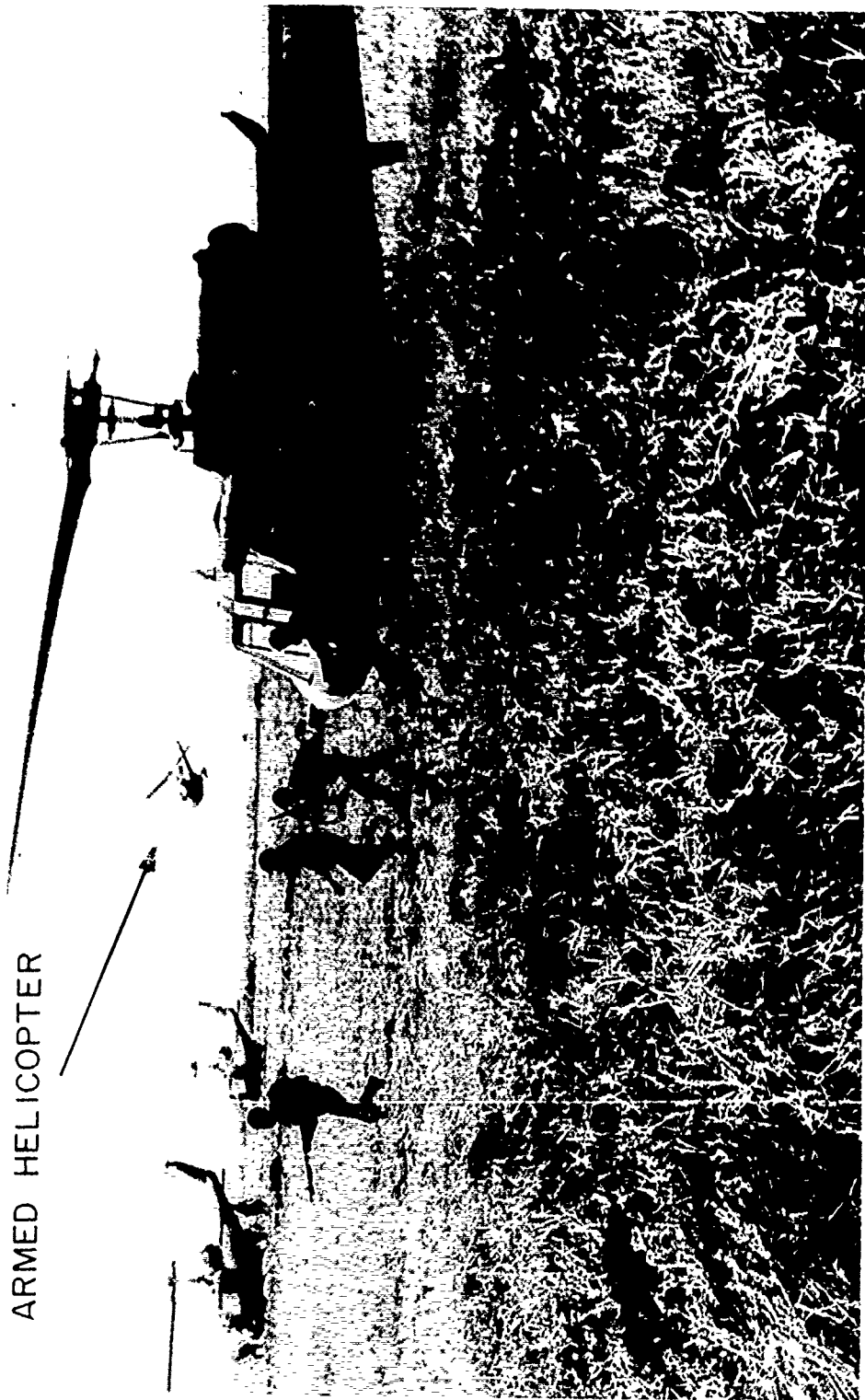
The capability of armed helicopters to circumvent known defenses, provide armed escort for airlift elements, and provide reconnaissance, fire support, and protective cover for the ground maneuver elements established them as significant weapons to be employed by the airmobile force commander within the 42d DTA.

(3) Close Air Support

During the evaluation close air support for the 21st Division airmobile operations was provided by VNAF A-1H and USAF A-1E fighters. Vietnamese A-1H's operated from airfields located at Bien Hoa and Tra Noc. United States A-1E's operated from the Bien Hoa airbase. Fighters were capable of providing close air support with $1\frac{1}{2}$ to 3 hours on station depending on fuel load and base of operation. They carried up to 6000 pounds of ordnance, which included 100-, 250-, and 500-pound GP bombs, 20-pound fragmentation bomb clusters, 260-pound fragmentation bombs, and 500- and 750-pound napalm bombs. Each aircraft was armed with four 20mm cannons and carried a total of 800 rounds of ammunition. On two operations, specific ordnance loads were requested for pre-planned airstrikes. There were many commonly used loads. A typical one was a combination of GP and fragmentation bombs; another was all napalm bombs.

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ARMED HELICOPTER



(U) FIGURE A-13. Armed helicopters covering landing.

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Close air support missions were controlled by airborne forward air controllers (FAC). Vietnamese FAC's used U-17 aircraft. United States FAC's used O-1 aircraft. All FAC aircraft carried target marking rockets.

Division close air support requests were of two types, pre-planned and immediate. Pre-planned request channels are shown in figure A-14. Pre-planned requests were normally submitted through division G3 air to corps TOC no later than 1600 hours on the day before the close air support was desired. Within the corps TOC, the requests were consolidated, priorities assigned, and the close air support plan submitted to the corps commander for approval. Approved close air support requests were passed to the adjoining air support operations center (ASOC). The ASOC forwarded the requests to the air operations center (AOC), where sorties were allocated to each corps ASOC. Normally, pre-planned requests were for air cover or ground alert in support of division operations. However, IV Corps ASOC did not allocate ground alert aircraft to specific operations. Instead, aircraft on ground alert were available for any required mission within the corps.

The division air liaison officer (ALO), who had direct communication with corps ASOC, was normally in the tactical command post to coordinate and expedite immediate air requests during airmobile operations. Immediate requests were obtained by calling the FAC and having him direct the fighters over the target. If the ground commander desired airstrikes and fighters were not overhead, the ALO relayed the request to, and coordinated with, ASOC. After ASOC and TOC agreed on the priority and availability of aircraft, the fighters took off.

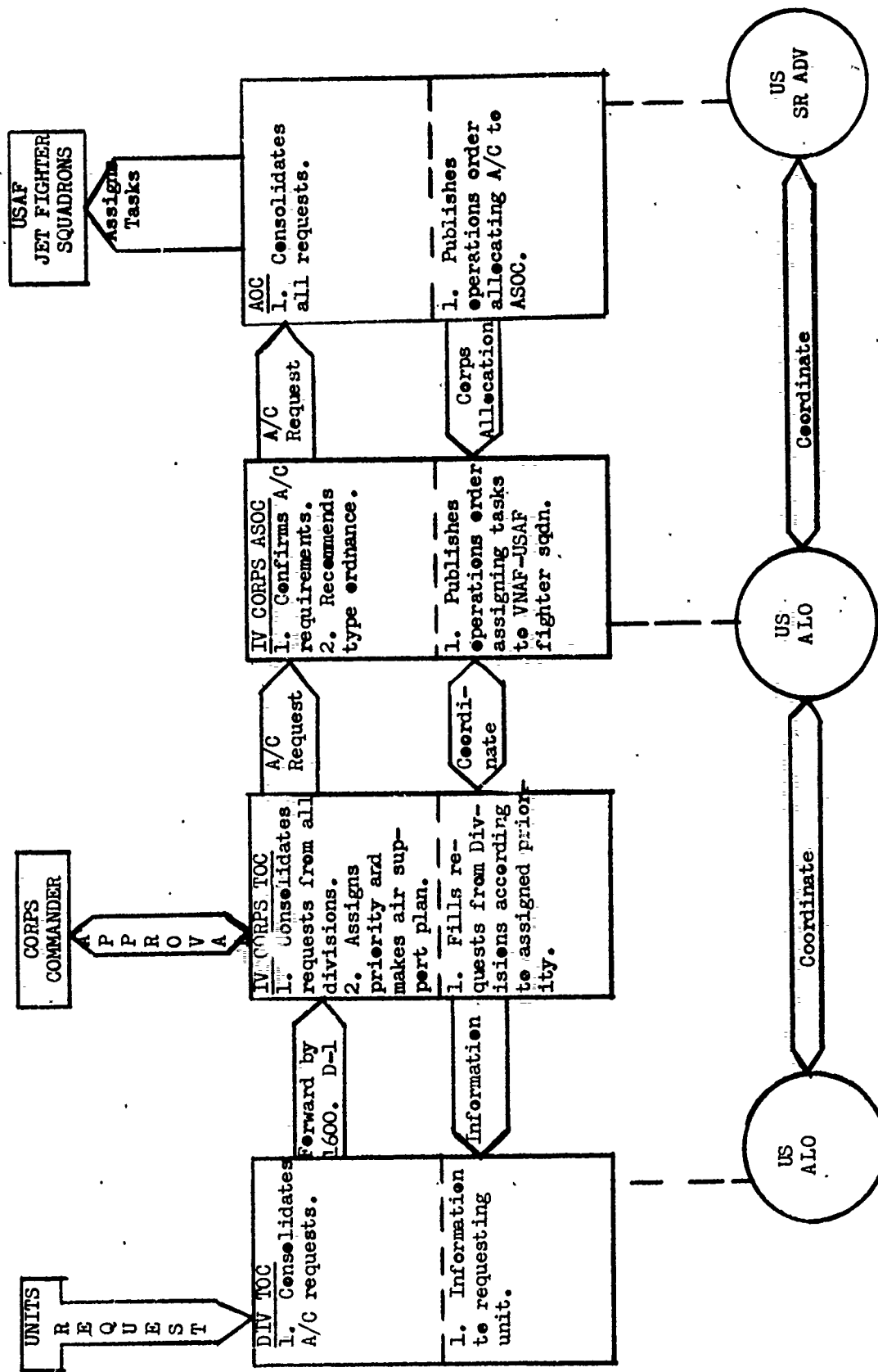
Air support was provided as requested on all but one operation when a pre-strike request was disapproved and continuous air cover could not be provided. Airstrikes were timely and accurate.

f. Logistical Support

Most logistical support procedures for airmobile operations in the 42d DTA had been standardized. Since all airmobile operations were directly controlled by the 21st Infantry Division, the division G4 advisor exercised staff supervision over aircraft re-supply at the staging airfield during airmobile operations.

Direct responsibility for logistical support of aircraft supporting airmobile operations varied at each of the five staging airfields in the 42d DTA. Since the division headquarters was at Bac Lieu, the division G4 advisor was directly responsible for logistical support of the helicopters at this airfield and personally directed the re-fueling and re-arming of aircraft. At Ca Mau and Vi Thanh, the sector senior advisors had direct responsibility for aircraft logistical support during operations. The resupply procedures followed at these

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(U) FIGURE A-14. Pre-planned air request channels

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three airfields are contained in an advisory team SOP. The S4, 13th Aviation Battalion was responsible for logistical support at Soc Trang and Can Tho airfields.

Supplies of fuel and ammunition were pre-stocked at each staging airfield in the DTA. Security of the airfields was provided by ARVN troops who were permanently assigned that mission. Re-fueling of the helicopters at the staging field was accomplished by M49 fuel tankers and 2 $\frac{1}{2}$ -ton trucks with drums and airmobile pumps. Trucks with mixed loads of 2.75-inch rockets in pods and 7.62mm machinegun ammunition were located at the staging field. Re-fueling and re-arming of an armed platoon usually took approximately 45 minutes.

Vietnamese Army units involved in an airmobile operation brought their ammunition with them from their home station. The portion of this ammunition designated for resupply was left at the staging airfield for delivery by helicopter as needed.

With the exception of Dan Chi 122, all medical evacuation was by helicopter. The medical evacuation helicopter accompanied the other helicopters into the operational area and remained until the termination of the operation, orbiting the area at 3000 feet. It monitored the UHF net (C&C helicopter), VHF net (armed helicopter platoon), and FM net (ground elements). Pickups were made at the direction of the C&C helicopter. The air ambulance was always escorted into and out of a pickup point by armed helicopters.

All logistical agencies involved were capable of supporting each airmobile operation. Pre-positioning of stocks of fuel and ammunition at the staging airfield and well-established logistical procedures adequately supported the requirements to re-fuel and re-arm the helicopters, re-supply the ARVN troops with ammunition, and provide rapid medical evacuation. There was no Class I re-supply to ARVN troops in the field. The troops were issued money with which to purchase their food from the indigenous personnel, either before or during the operation. Local procurement of Class I supplies was a problem at times. Comments from the advisors and observations of the evaluators revealed that the troops frequently took food without paying for it, thereby creating an ill feeling among the civilian population. Even when payment was made, food needed by the local people was consumed by the soldiers. This method required the individual soldier to locate, procure, and prepare his own meal, which distracted from the accomplishment of his primary mission.

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(C) ANNEX B

9TH DIVISION AIRMOBILE OPERATIONS

1. INTRODUCTION

Annex B documents airmobile operations conducted by the 9th ARVN Infantry Division from 5 March through 6 April 1965. Data were collected by evaluators who observed all phases of the operations, interviewed key participating personnel, both US and ARVN, and studied documents pertaining to the operations.

a. Physical Environment

The 9th Infantry Division conducted operations within the IV Corps Tactical Zone area known as the 41st division tactical area (DTA), as shown in figure B-1. Locations of the four operations documented during the evaluation are shown in figure B-2.

(1) Terrain

The 41st DTA, situated just north of the 42d DTA, is made up of six provinces and contains about 16,600 square kilometers of flat delta land. Except for seven hills in Chau Doc Province which rise to an elevation of 700 meters, the terrain has a mean elevation of only 6 meters. The Mekong and Bassac Rivers flow through the entire length of the DTA and much of the area consists of rice paddies. The numerous canals and streams that dissect the area are lined with groves of mango, banana, and palm trees that provide natural cover and concealment for the VC.

By March the rice in the area has been harvested, the paddies are relatively dry, and trafficability is good in the open areas.

(2) Climate and Weather

During March and early April the northeast monsoon is firmly established. Visibility is generally unrestricted except for occasional early morning ground fog. The average rainfall is $\frac{1}{2}$ inch or less. The majority of the shower activity occurs south of the 41st DTA.

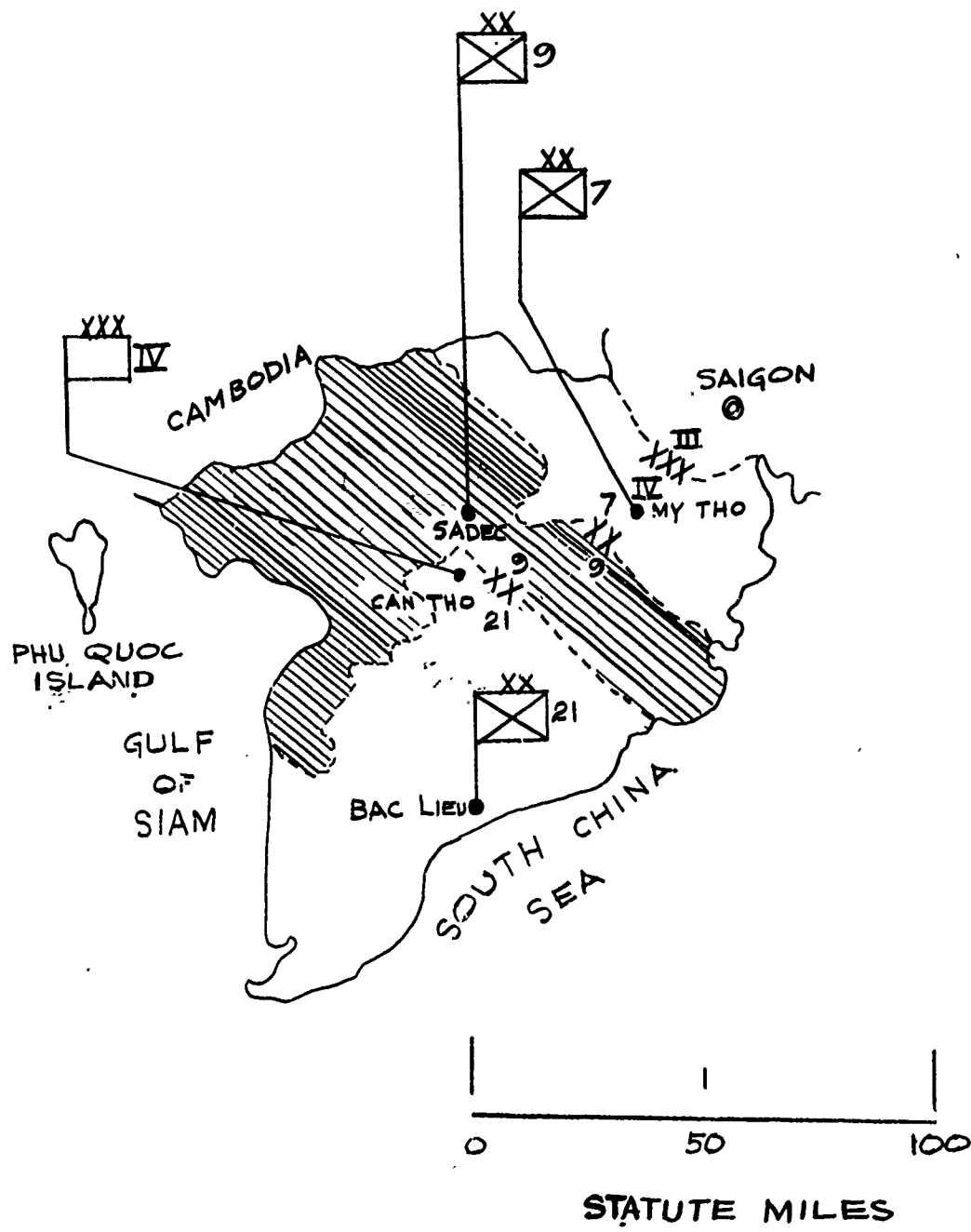
The average maximum temperature for March is 91 degrees Fahrenheit. The average relative humidity is 79 percent.

b. Military Elements

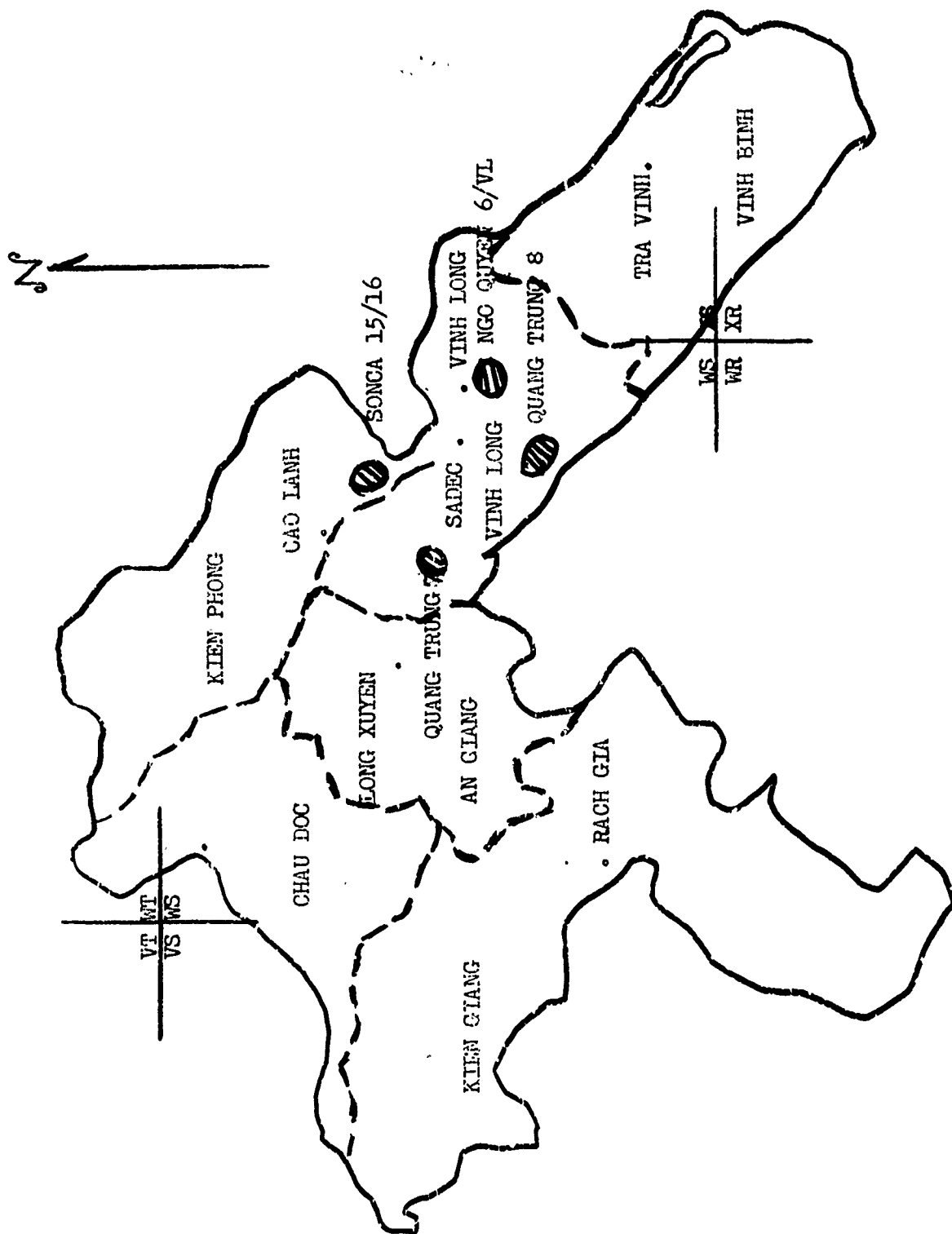
(1) ARVN Units

The command relationship among the 9th ARVN Infantry

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(U) FIGURE B-1. IV Corps tactical zone, 9th Division area of operations shaded.



(U) FIGURE B-2. 41st DTA and locations of 9th Division operations.

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Division and supporting units is shown in figure B-3.

The 9th Infantry Division, consisting of three infantry regiments and supporting units, was deployed in the 41st DTA as shown in figure B-4.

(2) US Aviation Units

The 114th Aviation Company of the 13th Aviation Battalion normally supported 9th Division operations. Organization of the 114th Aviation Company is the same as that of the 121st Aviation Company shown in annex A.

(3) General Insurgent Situation

Viet Cong (VC) military forces within the 41st DTA were provisional and district forces of commissars in each province. These units were considered to be local forces and no main force units were known to be operating within the DTA during the evaluation.

The VC strength reported for March 1965 by the G2 advisor, 9th Division was as follows:

<u>Provincial Forces</u>		<u>District Forces</u>	<u>Guerrillas (Full-Time)</u>
An Giang	None	200	200
Chau Doc	400	340	300
Kien Giang	450	860	1,366
Kien Phong	450	596	956
Vinh Long	270	390	1,022
Vinh Binh	850	830	1,440
	<u>2,420</u>	<u>3,216</u>	<u>5,284</u>

Total 10,920

2. DISCUSSION

a. Command and Staff Planning

During the evaluation, the mission of the 9th ARVN Infantry Division was to find and close with the enemy in order to capture or destroy him, to repel an enemy assault by fire or close combat, and to assist the provincial government in pacification operations. In order to fulfill the first of these missions the 9th Division, like most divisions in South Vietnam, undertook airmobile operations. Planning coordination among US advisors and ARVN staff was usually good.

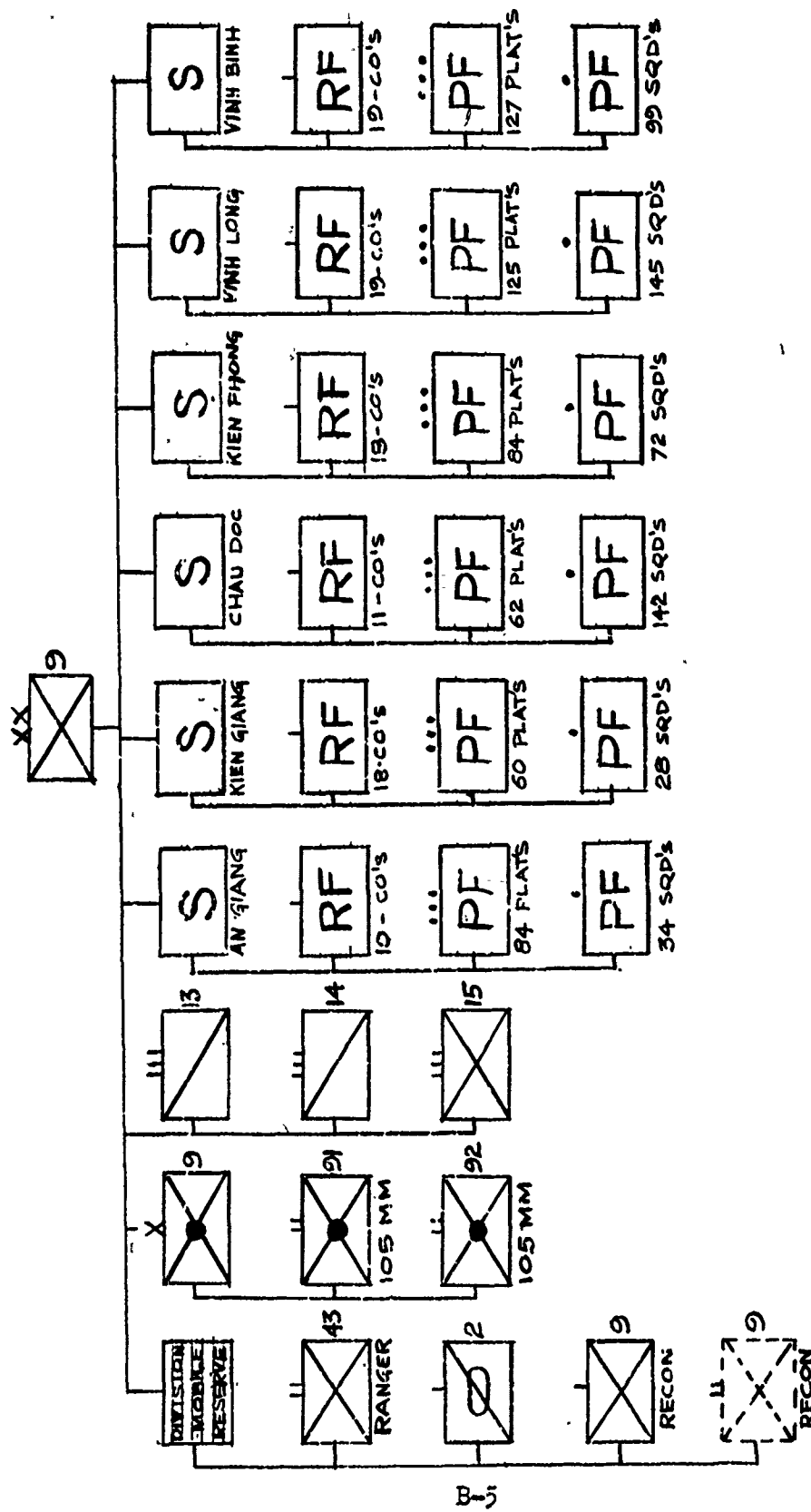
Helicopter request procedures and channels employed by the 9th Division were the same during the evaluation as those of the 21st

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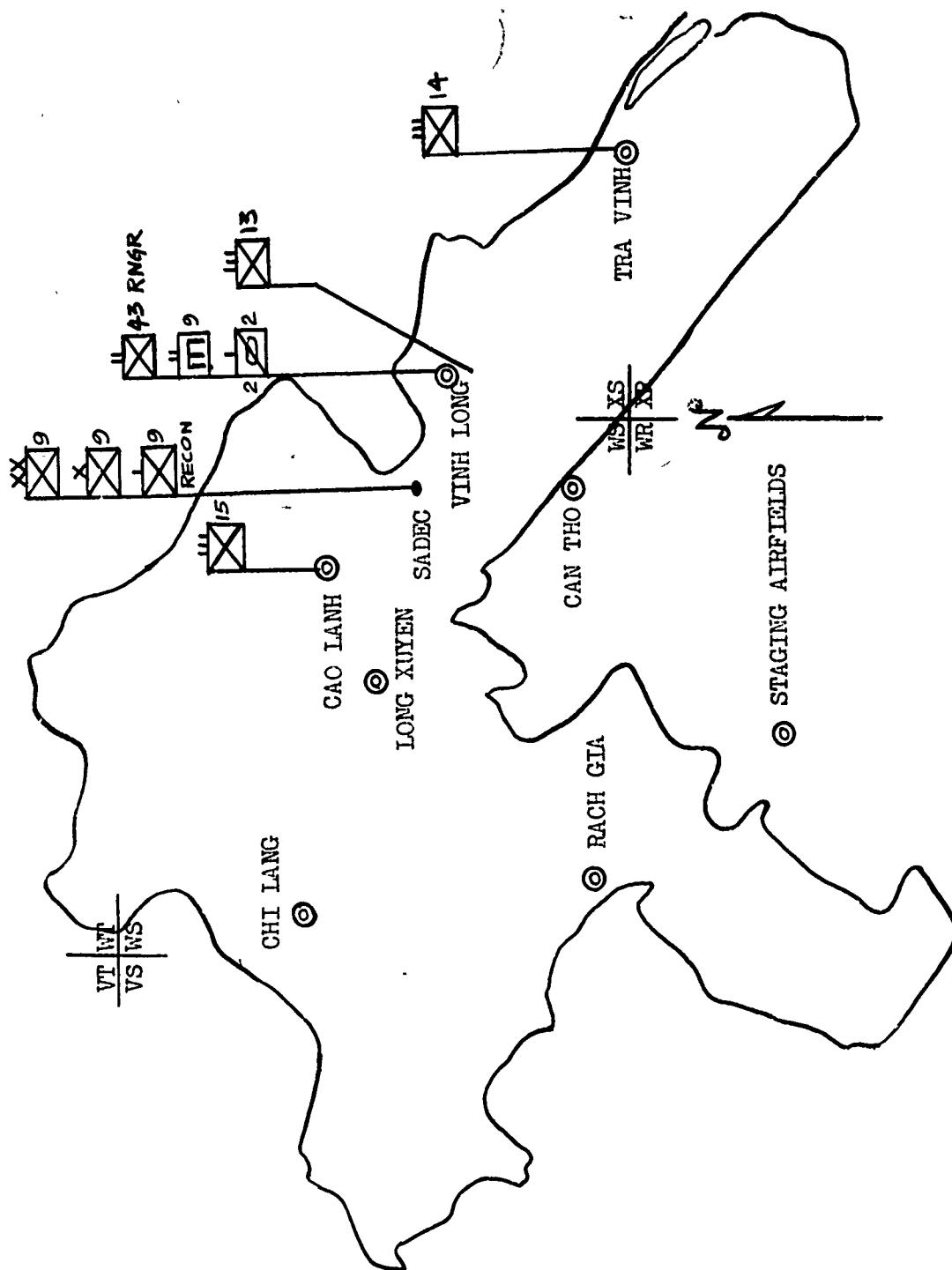
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(C) FIGURE B-3. Command relationships in the 41st DTA.

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(U) FIGURE B-4. Location of major units of 9th Infantry Division.

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Division described in annex A, except that ARVN requests were submitted by the deputy for operations in the 9th Division.

The four airmobile operations evaluated employed ground maneuver forces in search and clear operations. Airmobile forces planned for these operations were to be employed in a blocking, reinforcing, or reaction role or were to be heli-lifted to the operations area to participate as ground maneuver forces. Planning for these operations was deliberate and complete and units received timely warning orders. Written operation orders were issued for two operations, a written fragmentation order was issued for one operation, and an oral operation order was issued for another operation. Operation Sonca 15/16, a hastily planned, rapid reaction operation, employed a heli-lifted infantry battalion in conjunction with a ground maneuver infantry battalion. Planning for this operation was brief, rapid, and complete.

Normally, detailed loading or landing plans were not prepared in the 9th Division for airmobile operations. Even so, the 114th Aviation Company prepared a detailed air movement plan for three of the four operations evaluated. The loading and landing phases of all the operations observed were efficiently accomplished without detailed planning.

b. Organization for Combat

The division commander's concept of military operations during the evaluation was to conduct search and destroy operations with ground and heli-lifted maneuver forces. Large scale operations were difficult to conduct in the 41st DTA because of the dispersion of the infantry units and their varied missions such as operating training centers and protecting fixed installations (civilian and military). Because of this, the division commander required that the 43d Ranger Battalion, the 9th Reconnaissance Company, each regimental reconnaissance company, and a rifle company from each infantry battalion undergo extensive airmobile training. This training provided the division commander with 17 ARVN companies trained in airmobile operations. In addition, there were 12 regional force companies similarly trained.

c. Command and Control

It was the policy of the 9th Division commander that control of military operations should be at the lowest command level possible. As a result, the regimental headquarters controlled almost all military operations in the 41st DTA.

Each of the regiments had controlled many airmobile operations and as a result no difficulty was experienced in effecting coordination with supporting US aviation units during the evaluation. Although the regiment controlled the operation, planning was usually

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initiated at division or sector headquarters. Moreover, planning by the sector chief was limited to those units located within his sector. As a result, the operations employed a broad mix of units, including ARVN, Regional Force, Popular Force, ranger and, in two cases, the Navy. Although these forces were placed under operational control of the regimental headquarters, occasional slow responsiveness to orders indicated problems in the command and control relationship resulting from the blending of so many different types of units.

In each operation the regiment established a tactical command post (TAC CP) adjacent to the area of operations. In the last operation documented the TAC CP was also adjacent to the staging airfield. Tactical command posts were staffed with sufficient personnel (command group, S2, S3, S4, and fire support element) and communications equipment to control the operation. Periodically during each operation, the regimental commander and his advisor were airborne in a C&C helicopter.

The 114th Aviation Company used an O-1 airplane or UH-1B helicopter as a vector control aircraft, which was normally piloted by the aviation company executive officer and carried one of the division assistant G3 advisors. The mission of the vector control was to coordinate and control the movement of all US Army aircraft within the operations area and, when required, to direct the transport helicopters to the landing zone. The vector control also provided an advisor airborne radio relay. The aviation company commander believed it was imperative that a vector control aircraft be used in operations involving large numbers of aircraft conducting simultaneous landings in multiple landing zones. However, in the operation evaluated, its most significant contribution was radio relay. The mission of directing the transport helicopters into and out of the landing zones was successfully performed by the pilot of the C&C helicopter and the armed platoon commander.

The US advisor TAC CP, located adjacent to the ARVN TAC CP, was normally staffed with the battalion, regimental, or division artillery advisor, the regimental and intelligence advisor (NCO), and the regimental advisor's radio operator. The regimental advisor was with his counterpart. The advisor CP was equipped with an AN/PRC-10 radio for communicating with the control element in the C&C helicopter, the pilot of the vector control aircraft, US advisors with committed units, and the division TOC (when in range). Because the CP was close to the operations area, the AN/PRC-10 radio provided adequate communication. The advisor CP also had the capability of communicating with the division advisory headquarters in Sadec by AN/GRC-9 radio but, because of the short distance, the regimental advisor was able to contact the division headquarters with the FM set by relaying through the vector control aircraft. Advisor communications were adequate for effective control of the operations evaluated.

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The US Army aviation liaison officer to the 9th Division assisted the airmobile units in their marshalling and loading at the staging airfields, including coordination among the unit advisors and the aviation units.

d. Tactics, Techniques, and Procedures

(1) Loading

In 3 of the 4 operations observed, the 9th Division requested 11 transport helicopters for operations involving company-size units. In the fourth, Sonca 15/16, a quick-reaction operation, 10 transport helicopters were used.

Eleven helicopters, each carrying an 8-man ARVN squad as a normal assault load, was sufficient to lift the combat elements of a company. The airlifted troops with their individual and organizational equipment did not exceed the maximum operating weight of the UH-1B transport helicopter (8500 pounds). Each squad was positioned beside their assigned helicopter or beside the helicopter landing site as soon as possible after their arrival at the departure airfield or pickup point. At Vinh Long, pylons were used to mark the loading point. Loading was SOP and did not require a written plan.

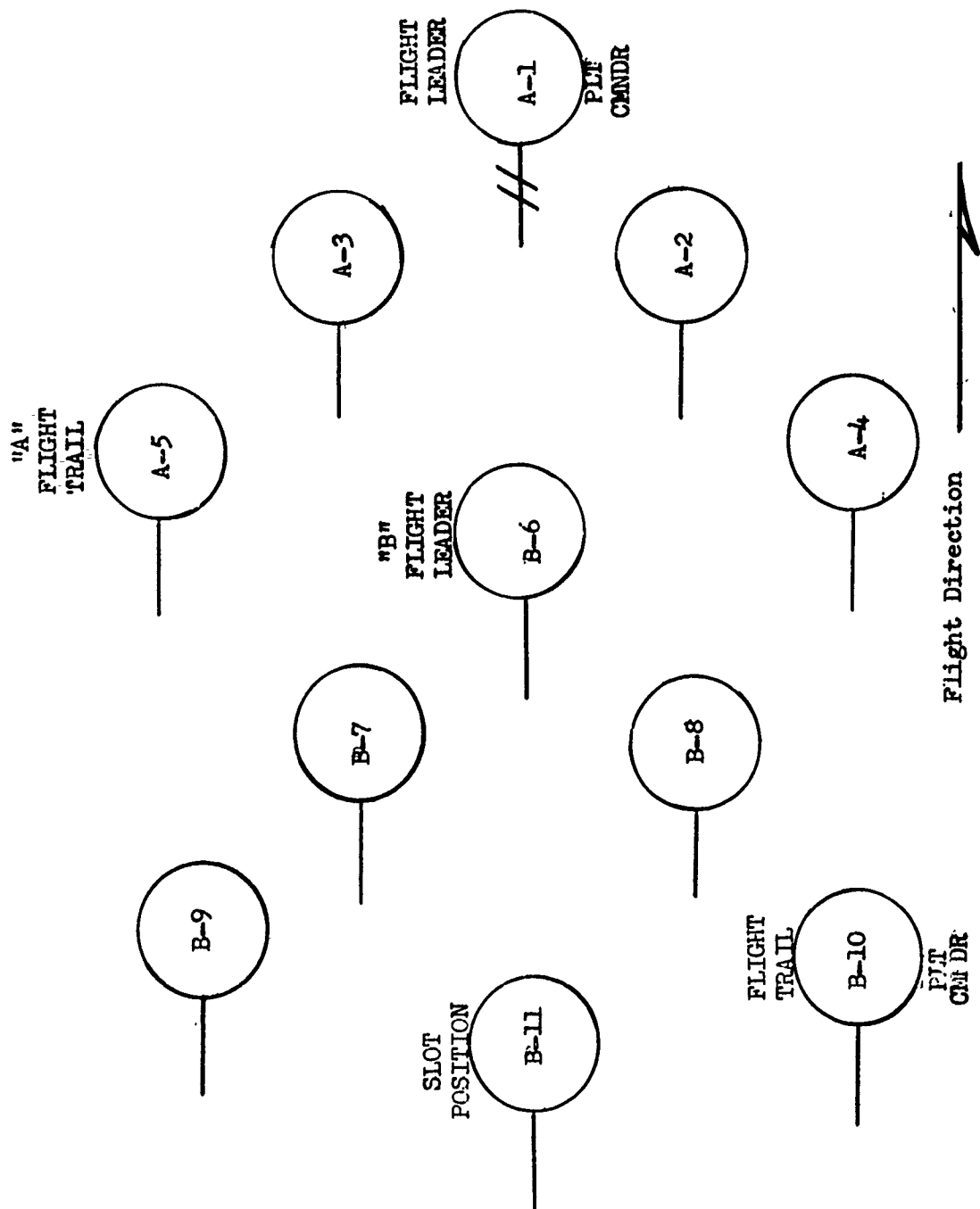
During several of the operations dust blowing at the pickup point constituted a serious hazard to the flight. On operation Quang Trang 7 the dust was so bad that many of the weapons carried by the troops were fouled.

(2) Air Movement

As with the 21st Division, the area between the departure airfield and the IZ was always considered to be under VC control. To facilitate control of the air movement, the 114th Aviation Company's operations officer normally selected an initial point (IP) and release point (RP). These were marked on the overlay to the aviation company's operation order. A direct route was usually flown to the appropriate IP and then to an RP. The flight route from the RP to the IZ was directed by the 114th Aviation Company commander flying in the C&C helicopter. Alternate routes were not planned because of the short distances to the objective areas and the non-availability of known safe routes. Overflights of densely wooded areas and tree lines were avoided because of the danger of concealed anti-aircraft weapons.

An enroute altitude of 2000 feet above the terrain was normally flown to avoid ground fire. Enroute airspeed was 70 knots indicated. Transport helicopters used vees-in-trail formation (figure B-5). No enroute aerial escort was used because of the short distance to the objective area and the flight altitude.

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(U) FIGURE B-5. Vees-in-trail formation.

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(3) Landing

At a point 1 to 3 kilometers from the proposed LZ and at an altitude of 2000 feet, the troop carrying helicopters began a gradual descent until they were 500 to 700 meters from the LZ's, where they were met by an escort fire team from the armed platoon. The armed platoon normally had already reconnoitered the objective area and proposed LZ prior to the arrival of the first airlifted element. This reconnaissance time was kept to a minimum, usually about 5 minutes, in order to gain maximum surprise. After they met the troop carrying element, the armed platoon was used to suppress by fire known or suspected VC positions adjacent to the LZ. The actual area was designated by the senior advisor and the US aviation company commander in the C&C aircraft. The LZ was marked with a smoke grenade thrown from the C&C helicopter or one of the armed helicopters. The armed platoon commander actually selected the final approach flight path for the transport helicopters, as he was the most familiar with the enemy situation. The actual touchdown point was determined by the pilot of the lead transport helicopter.

During one operation, Quang Trung 8, a burned-off rice field was selected as an LZ. The reduced visibility caused by blowing soot and ashes constituted a hazard to safe flight.

The wees-in-trail formation that was flown into the LZ's on all observed operations was probably the most compact formation that could be flown with safety. The troops were landed far enough apart for adequate dispersion in the operational environment, yet close enough for effective control. Upon leaving the helicopters, personnel immediately formed into a skirmish line and moved to the area to be cleared.

The operations order normally designated landing times and landing zones for the initial force (usually two lifts). No time schedule was published for subsequent lifts, as they were normally committed to an on-call basis into LZ's of opportunity. Pre-selected LZ's were normally closely adhered to, unless the situation so completely changed as to make them useless.

Landing zones used in the operation were located 300 to 1000 meters from initial objectives, as 400 meters were sufficient to place the troops and helicopters beyond effective small arms fire. Any greater distance from the objective provided too much time for the enemy to react.

The route flown by the transport helicopters out of the LZ was selected by the armed platoon commander. During operation Sonca 15/16, the transport helicopters each turned 180 degrees after unloading and flew out of the approach path.

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(4) Tactics of the Committed Forces

The mission of the heli-lifted forces on each operation observed in the 41st DTA was to search and clear an assigned wooded area lining a canal. The unit selected for this mission on three of the four operations observed was the 43d Ranger Battalion. On operation Sonca 15/16 the 3d Battalion, 15th Infantry Regiment was used. The performance of this battalion was equal to that of the ranger battalion.

The commander of the heli-lifted unit and his US advisor normally rode in the same helicopter, which was usually positioned in the middle of the flight. Since these operations were pre-planned and executed according to plan, instructions were normally not given to the ARVN commander while airborne, which probably was not advisable. The airlifted unit commander should be briefed while airborne on the exact location of the LZ, the latest tactical situation, and the direction of attack from the LZ. Even on a pre-planned operation, when the commander had the LZ plotted on his map, it was often difficult to remain correctly oriented during the flight and landing.

For example, on operation Sonca 15/16, the commander of the first airlifted company had been briefed prior to takeoff but he apparently became disoriented while airborne and, after landing, moved his company in the wrong direction. On operation Quang Trung 8, the location of the LZ and the direction of the assault were relayed to the ARVN commander by the pilot of his helicopter while airborne, because the location of the LZ had been changed after the flight took off from the staging airfield.

The US advisor with the committed force maintained liaison between his counterpart and the armed helicopter platoon commander. The policy of the 9th Division advisory team during the evaluation was to have an advisor with each airlifted force but on occasion this was not possible because the number of advisors were limited.

The helicopter landed parallel to the tree line whenever the wind direction permitted in order to allow the troops to come on line as quickly as possible. On all operations observed in the 41st DTA the troops moved into the woods without opposition and without firing.

Usually one company was committed on each side of the canal. Once inside the woods the units turned in the direction of attack and moved abreast along the canal. When two companies of the ranger battalion were committed in this manner, the battalion executive officer was usually designated the task force commander. An exception was on Quang Trung 8 when the battalion commander accompanied the first lift.

Communications were maintained within units by visual

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and audio signals and among units by FM radio. No heavy equipment or heavy weapons were carried.

Ground tactics were very simple. Planning at battalion and company level was minimal. Re-positioning by heli-lift of units already committed by means of field pickups was not accomplished on any operation observed. On two occasions ground units did not follow the plan. On Sonca 15/16 the 1st Battalion, 15th Regiment did not clear an assigned area and on Quang Trung 8 the 698th RF Company failed to reach an assigned objective, even though it was unopposed. On two other occasions ground units failed to maintain the momentum of the attack. On Ngo Quyen 6 the 43d Ranger Battalion halted its advance for lunch and on Sonca 15/16 the 1st Battalion, 15th Regiment halted and waited over an hour for artillery support. In both instances the VC were able to escape under the cover of darkness.

e. Fire Support

The fire support means available to the 9th Division commander were artillery, armed helicopters, and close air support.

(1) Artillery

The 9th Division artillery consisted of two organic 105mm artillery battalions and attachments. These attachments were one battery of 105mm howitzers and one battery of 155mm howitzers. Each of the batteries was organized into three platoons of two howitzers and the units were deployed in widely dispersed 1- or 2-howitzer firing positions to provide maximum artillery coverage for the 16,600 square kilometers of the 41st DTA. The static firing positions were well-organized, each with its own fire direction and forward observer capability.

While deployed in a defensive role, the primary mission of the division artillery was to provide fire support to secure the small towns, villages, hamlets, and outposts within range of the guns occupying static positions. For relatively isolated but well-populated areas, the supporting fires of artillery were in many cases the only means immediately available to ward off marauding VC units. This was particularly true at night when VC movement was more frequent and the threat of attack was greater. While providing supporting fires for these territorial areas, the artillery was fulfilling its primary mission of direct support of the sector. This mode of employment for division artillery facilitated planning for those airmobile operations that were initiated at the sector level.

Each sector and regiment had a fire support coordinator and a liaison officer who advised the commander on the use of artillery to support airmobile operations. Time permitting, the fire support

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coordinator or artillery liaison officer prepared the fire support plan. The fire support plan, when prepared, consisted of an overlay which indicated at a minimum the pre-selected target concentrations for on-call fires. The fire support plan sometimes included additional information such as objectives, unit boundaries, landing zones, and the location of the artillery firing positions. The mission normally assigned to supporting artillery units was that of direct support.

In planning the use of artillery to support an airmobile operation, the sector or regimental commander first considered the artillery which was already positioned and in support of his particular area. When additional artillery support was needed, it was provided by the division artillery commander.

Artillery support for airmobile operations, was provided by IV Corps' attaching one 155mm howitzer battery to the 9th Division.

Prior to the start of an operation, a forward observer was provided to each unit designated for commitment during the operation. The forward observers remained with these units throughout the operation and had the capability to communicate with the fire support coordinator who monitored the FO/FD net and was the approving authority on all fire requests.

During the evaluation, artillery was planned for each airmobile operation and was designated and positioned with respect to its mission. During operations Ngo Quyen 6/VL and Sonca 15/16, lucrative targets developed but the artillery was not employed. Had artillery been used to neutralize these targets, the airmobile forces might have been able to seize assigned objectives. Artillery was not used because the commanders were unwilling to accept an alleged high risk to friendly troops.

(2) Armed Helicopters

Conditions for employing armed helicopters within the 41st DTA were good. Even though wooded areas were numerous along the canal lines, most of the area was open rice paddies with interlacing canals. Man-made structures such as antennas, overhead wires, buildings, and other types of hard-to-see obstructions which could be classified as fixed hazards to flight safety were almost non-existent. However, mango and palm trees growing in groves along the canals attained heights of approximately 40 feet. Otherwise, there were no obstructions to significantly affect the employment of the armed helicopters.

There were no armed helicopter units organic to or in direct support of the 41st DTA. There were, however, three aviation companies in general support of the IV Corps, which provided the required

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helicopter support for the three divisions of the corps. Organic to each of these aviation companies was an armed helicopter platoon. One of the two aviation companies located at Vinh Long, the 114th Aviation Company, was habitually designated by IV Corps to provide armed helicopter support for the 9th Division operations. Most of the airmobile operations conducted by the 9th Division required the support of two armed platoons. This additional armed platoon requirement was usually provided from Company A, 502d Aviation Battalion.

While in support of the 9th Division airmobile operations, the armed helicopters performed a variety of tasks for which they were well-trained.

Prior to the arrival of the heli-lifted forces in an airmobile operation, armed helicopters performed visual and armed reconnaissance of the LZ's and adjacent areas to determine their suitability as a landing area for the transport helicopters. These armed helicopters, flying at slow speeds (60 to 90 knots) just above the ground, were able to scrutinize carefully the LZ and detect indications of a threat. Sightings of military significance were reported immediately and the control element was thus able to revise the intelligence estimate and, when necessary, to adjust the tactical plan.

During the evaluation, there was never an occasion when airmobile forces were trapped in a landing zone and no troop carrying helicopters were struck by ground fire.

Once the airmobile forces were committed on the ground, armed helicopters provided suppressive fire support to the front and flanks of the maneuver force and a means of engaging pinpoint targets for destruction or neutralization. The armed helicopters were capable of delivering sufficient suppressive fires to sustain an offensive encountering light to moderate resistance. However, when an offensive became bogged down by heavy resistance from well-fortified positions, the armed helicopters lacked the heavy fire support required to neutralize the resistance. During operation Ngo Quyen 6/VL, armed helicopter attempts to neutralize well dug-in VC positions with overhead cover were unsuccessful, but the target was suppressed. The helicopters employed machineguns and rockets for more than 5 hours.

When requested to provide close-in supporting fires on targets of opportunity that could be successfully attacked by the armed helicopters, the results were significant. Close-in fires were delivered accurately on targets less than 40 meters in front of the attacking troops. There was no other fire support means available to the ground commander that was capable of delivering this type of support without considerable risk to friendly troops.

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(3) Close Air Support

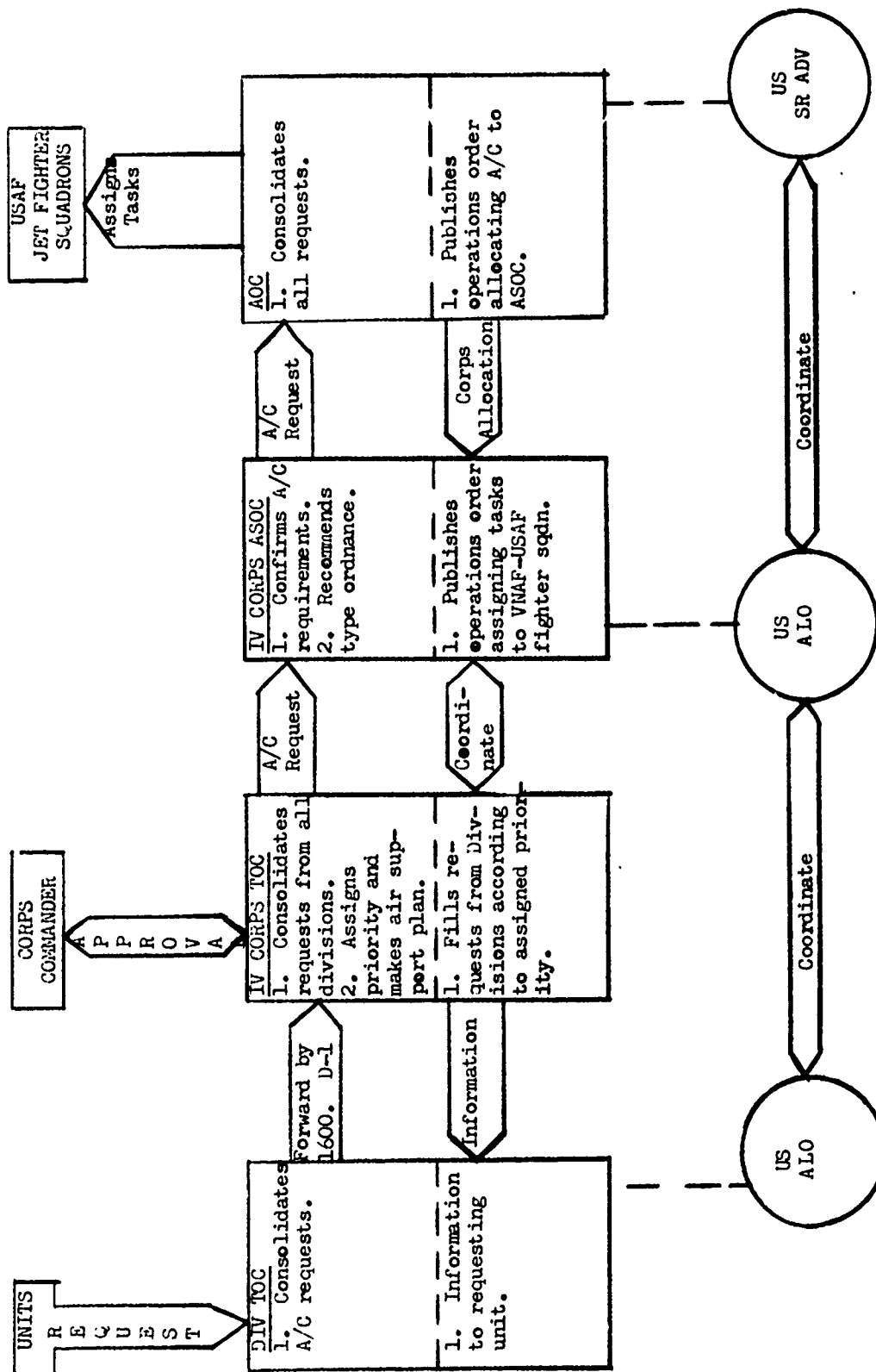
During the evaluation, close air support for the 9th Division airmobile operations was provided by VNAF A-1H aircraft flying from the Bien Hoa airbase located 80 nautical miles from the 41st DTA. Strike aircraft operating this far from home base could stay on station over an operation in the 41st DTA only 1 or 2 hours, depending on the range and the weight of fuel and ordnance carried. Fighters could carry up to 6000 pounds of ordnance, which included 100-, 250-, 500-, and 750-pound GP bombs, 120-pound fragmentation bomb clusters, 260-pound fragmentation bombs, 500- and 750-pound napalm bombs, and 100-pound white phosphorous bombs. Each aircraft carried four 20mm guns and a total of 800 rounds of ammunition. Vietnamese strike aircraft usually operated in flights of two and occasionally in flights of three or four.

Close air support missions were controlled by VNAF FAC's flying U-17 aircraft. All FAC aircraft carried smoke grenades or fired smoke rockets to mark targets.

Division close air support requests were of two types, pre-planned and immediate. Pre-planned request channels are shown in figure B-6. Pre-planned requests were normally submitted through division G3 air to IV Corps TOC no later than 1600 hours on the day before the close air support was desired. With the corps TOC, requests were consolidated, priorities were assigned, and a close air support plan was submitted to the corps commander for approval. Approved close air support requests were passed to the adjoining air support operations center (ASOC). The ASOC forwarded the requests to the air operation center (AOC), where sorties were allocated to each corps ASOC. Normally, pre-planned requests were for air cover or ground alert in support of division operations. However, corps did not actually provide ground alert aircraft for specific operations. Aircraft on ground alert were considered to be available for employment anywhere they were needed within the IV Corps area.

The 9th Division SOP channel for immediate air requests was from the ground commander to the FAC when air cover was overhead. The FAC then called in the fighters. When air cover was not overhead, the request went to the division G3 and then to the ALO. The G3 would then contact the corps TOC while the ALO would contact the corps ASOC. Priority was assigned within the TOC and coordinated with ASOC for aircraft availability. If the request was approved, fighters already airborne on a lower priority mission were sometimes diverted or strike aircraft on ground alert were scrambled to support the operation. A USAF ALO was present and remained at division TOC to coordinate and expedite immediate air requests through direct communication with corps ASOC.

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(U) FIGURE B-6. Pre-planned air request channels.

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f. Logistical Support

Staging airfields available for airmobile operations in the 41st DTA were located at Vinh Long, Tra Vinh, Cao Lanh, Long Xuyen, Cai Lang, and Rach Gia (Figure B-4) but only the airfields at Vinh Long and Cao Lanh were used for operations during the evaluation. In addition, the new airfield near Can Tho was used on operation Quang Trung 8, although it was not in the 41st DTA.

When staging from Vinh Long airfield, the responsibility for logistical support of the helicopters was shared by the two aviation companies stationed there (114th and A/502d). At the new Can Tho airfield the 114th Aviation Company was responsible for re-fueling the helicopters and Company A, 502d Aviation Company was responsible for re-arming. At all other staging airfields, the 9th Division G4 advisor was responsible for logistical support of the aircraft and he requested fuel and ammunition on a weekly basis from the 13th Aviation Battalion. Logistical support of the ARVN units participating in an airmobile operation was the responsibility of the commander of the controlling headquarters for the operation. Based upon previous experience, sufficient stocks of fuel and ammunition to support an airmobile operation were maintained at each of the staging airfields except at Long Xuyen and the new Can Tho airfield.

Fuel was available at Long Xuyen but no ammunition was stocked there because of a lack of storage space. In order to have supported an operation staged from Long Xuyen, it would have been necessary to move ammunition by convoy or air from Can Tho. This limited the use of Long Xuyen to pre-planned operations only. However, during the evaluation, work was being done to provide Long Xuyen with an ammunition storage capability. For the operation staged from the new Can Tho airfield, it was necessary to pre-position fuel, ammunition, and tankers since the base was still under construction.

For pre-planned operations at all airfields except Vinh Long, additional 2½-ton trucks loaded with 55-gallon drums of fuel and equipped with airmobile pumps were used to augment the re-fueling capability of the airfield tankers. The trucks and fuel were on hand at the staging field and airmobile pumps were flown in from Vinh Long.

Ammunition re-supply for the ARVN was from pre-stocked amounts at all regiment and sector headquarters and was transported by truck to the controlling headquarters tactical CP for an airmobile operation.

The airfield nearest to the operational area was the re-supply base for aircraft. An NCO from the advisory team nearest each airfield was in charge of providing fuel and ammunition to the helicopter crews. During an operation, this NCO was assisted by personnel from his advisory team and local ARVN soldiers. Re-fueling and re-arming was

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a joint effort between the airfield crew and the helicopter crews. An armed helicopter platoon of five helicopters could usually re-fuel and re-arm in about 45 minutes.

Normal re-supply of ground units was by surface means. Emergency re-supply of ground and airlifted units was usually by helicopter.

The ARVN troops were given money to purchase food from the local inhabitants in the area of operations. This method required the individual soldier to procure and prepare his own food, thereby distracting him from his mission.

Critically wounded ARVN troops and all wounded troops from the airlifted forces were evacuated by air ambulance. Those ground maneuver troops who were not critically wounded were evacuated by surface means.

Except for an inadequate stock of rockets at Cao Lanh airfield during operation Sonca 15/16, no logistical difficulties were encountered. All logistical agencies were capable of performing their functions efficiently. It should be noted, however, that the NCO's in charge of airfield re-supply were performing this function as an additional duty.

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(C) ANNEX C

22D DIVISION AIRMOBILE OPERATIONS

1. INTRODUCTION

This annex describes airmobile operations conducted in the 22d division tactical area (DTA) from 20 April through 10 June 1965. Most of the information presented was collected by evaluators who were present during the operations. Additional data were obtained through interviews with participating US and ARVN personnel and a study of documents and records pertaining to the operations.

a. Physical Environment

The 22d Infantry Division conducted operations in the eastern third of the II Corps Tactical Zone. Locations of 22d Division operations and locations of other units operating in the 22d DTA are shown in figure C-1.

(1) Terrain

The 22d DTA, composed of 10 districts of Binh Dinh Province, varied in terrain from heavily wooded mountains and narrow, cultivated valleys in the western portion to flat cultivated rice fields and coastal beaches interspersed with sharp-crested mountain spurs in the east. The DTA contained portions of two strategic highways: national highway 1 running north and south and national highway 19 running east and west.

(2) Climate and Weather

April to mid-May is the southwest monsoon transitional period in the coastal regions of the 22d DTA. Thunderstorms and high winds are prevalent throughout the area. After mid-May the dry season sets in along the coast and the rainy season starts in the mountains to the south and west. The temperature rises in May, reaching a maximum in August. Cloud cover in the mountains obscures mountain tops during May and June, causing flying hazards.

The average maximum temperature for the April, May, June period is 90 degrees Fahrenheit and the average minimum is 78. The average relative humidity is 79 percent.

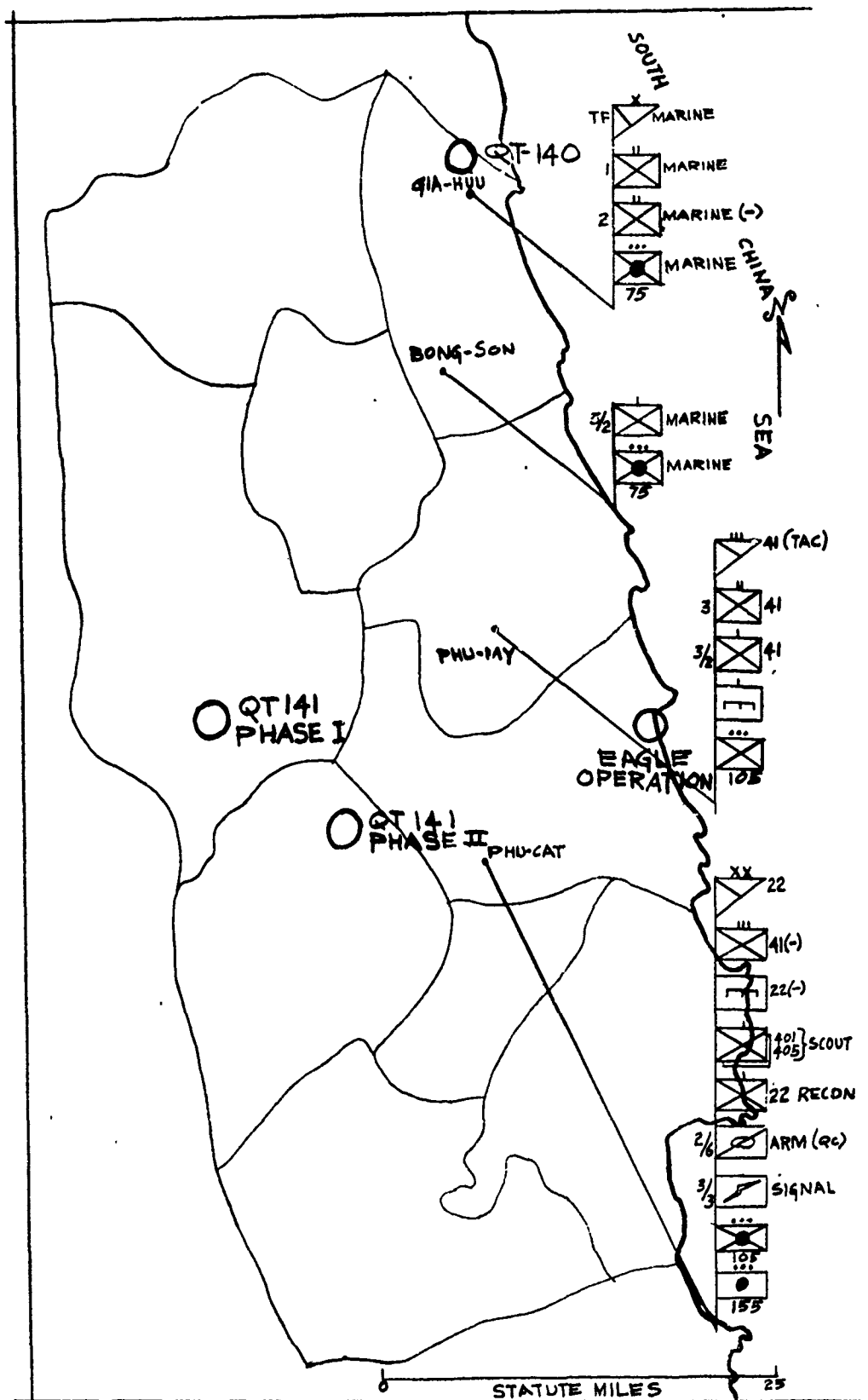
b. Military Elements

(1) ARVN Units

The command relationship of the 22d Infantry Division and attached units is shown in figure C-2. The division, although consisting of three organic infantry regiments, employed only one in the

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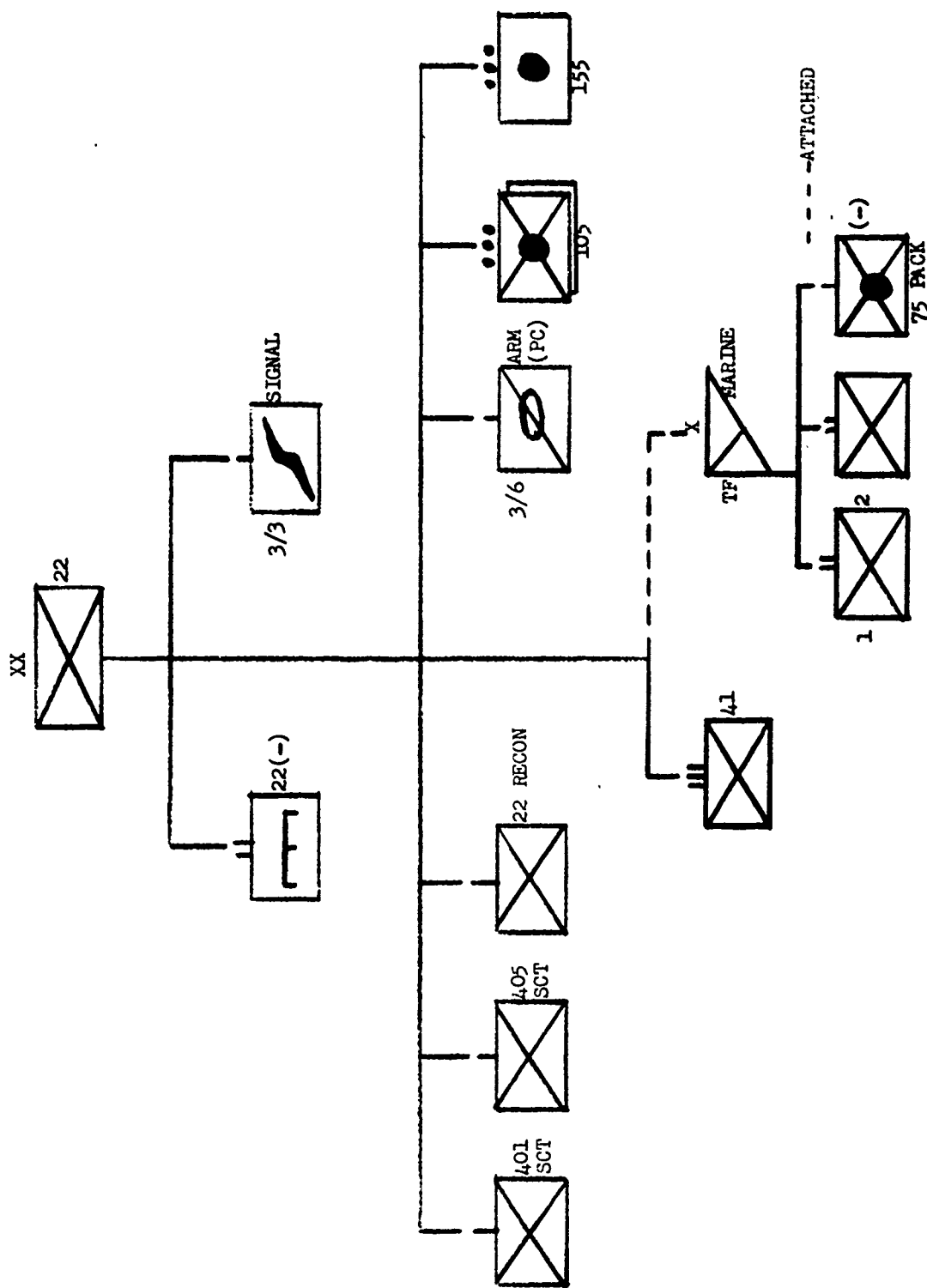


(C) FIGURE C-1. Location of units and operations within 22d DTA

ANNEX C

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(U) FIGURE C-2. Command relationship in the 22d DTA.

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22d DTA. The other organic regiments and supporting units were detached and employed in the special tactical zone (Pleiku-Kontum area) west of the 22d Division DTA under control of II Corps. The two 105mm and one 155mm artillery platoons shown in figure C-2 were normally employed in a mobile role to support division operations. Other artillery was dispersed throughout the DTA in support of the districts, but was also used to support operations conducted within its range.

(2) Eagle Forces

The term eagle forces as applied in the 22d DTA referred to a unit of platoon size that was airlifted into and out of an objective area by helicopters. The duration of eagle operations was planned to be less than two hours.

(3) US Aviation Units

The 52d Combat Aviation Battalion, with headquarters at Pleiku, provided aviation support to the II ARVN Corps. The battalion was composed of the 117th Aviation Company (airmobile) located at Qui Nhon, the 119th Aviation Company (airmobile) located at Pleiku, and the 145th Airlift platoon located at Nha Trang. Battalion composition is shown in figure C-3.

Eagle flights of the 22d Division were normally supported by the 117th Aviation Company. Composition of the 117th Aviation Company is shown in figure C-4. The 120th Aviation Company (airmobile) from Saigon was attached to the 52d Aviation Battalion for one operation.

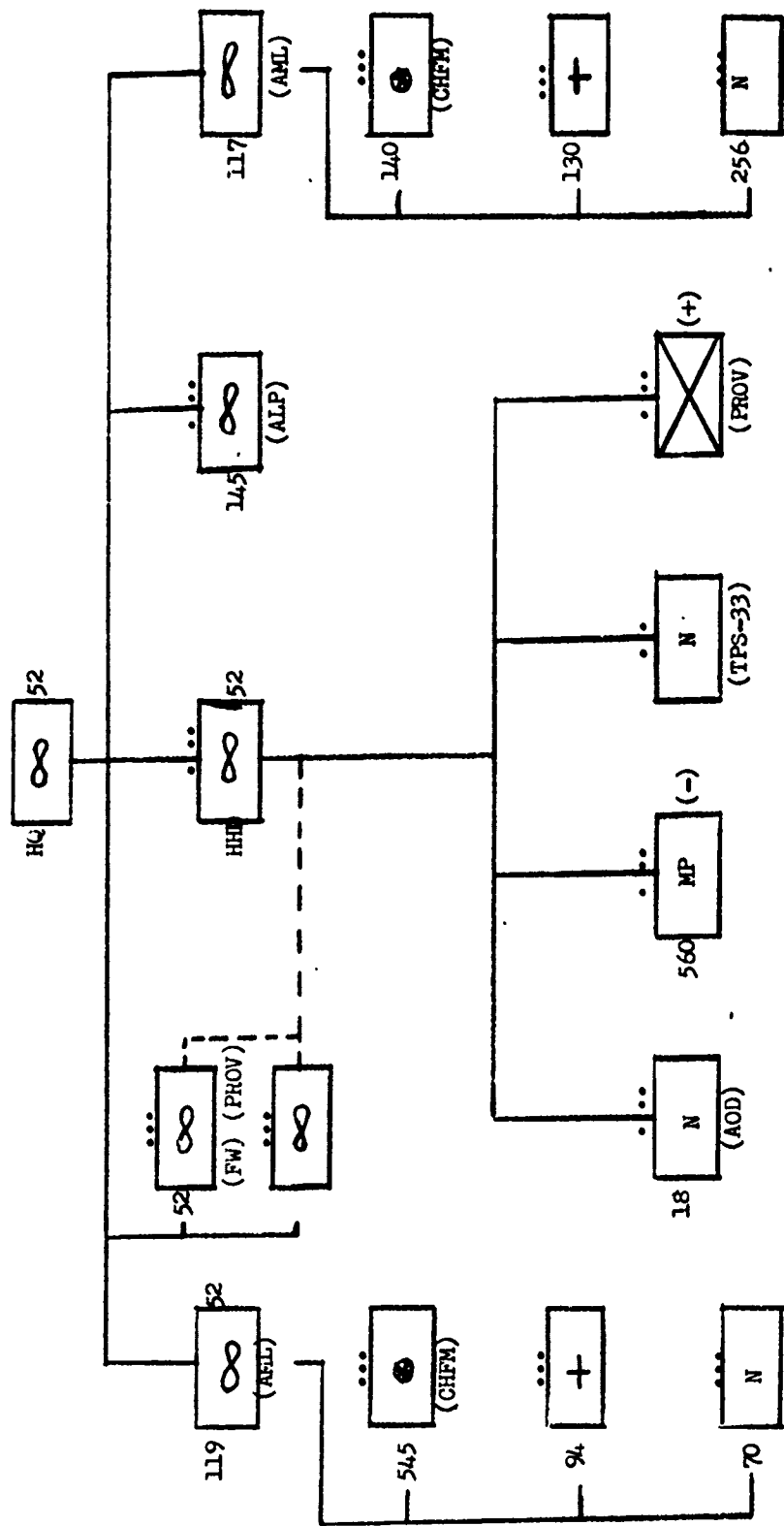
(4) General Insurgent Situation

The Viet Cong (VC) order of battle in the 22d DTA was reported by the G2 advisor, 22d Infantry Division, to have consisted of the following units as of 20 April 1965:

<u>Unit</u>	<u>Strength</u>
2d VC Main force Regiment	2,324
Tay Son Local Force Battalion	500
X32 Local Force Battalion	450
10 local force companies	1,080
Village/hamlet platoons	<u>5,690</u>
	10,044

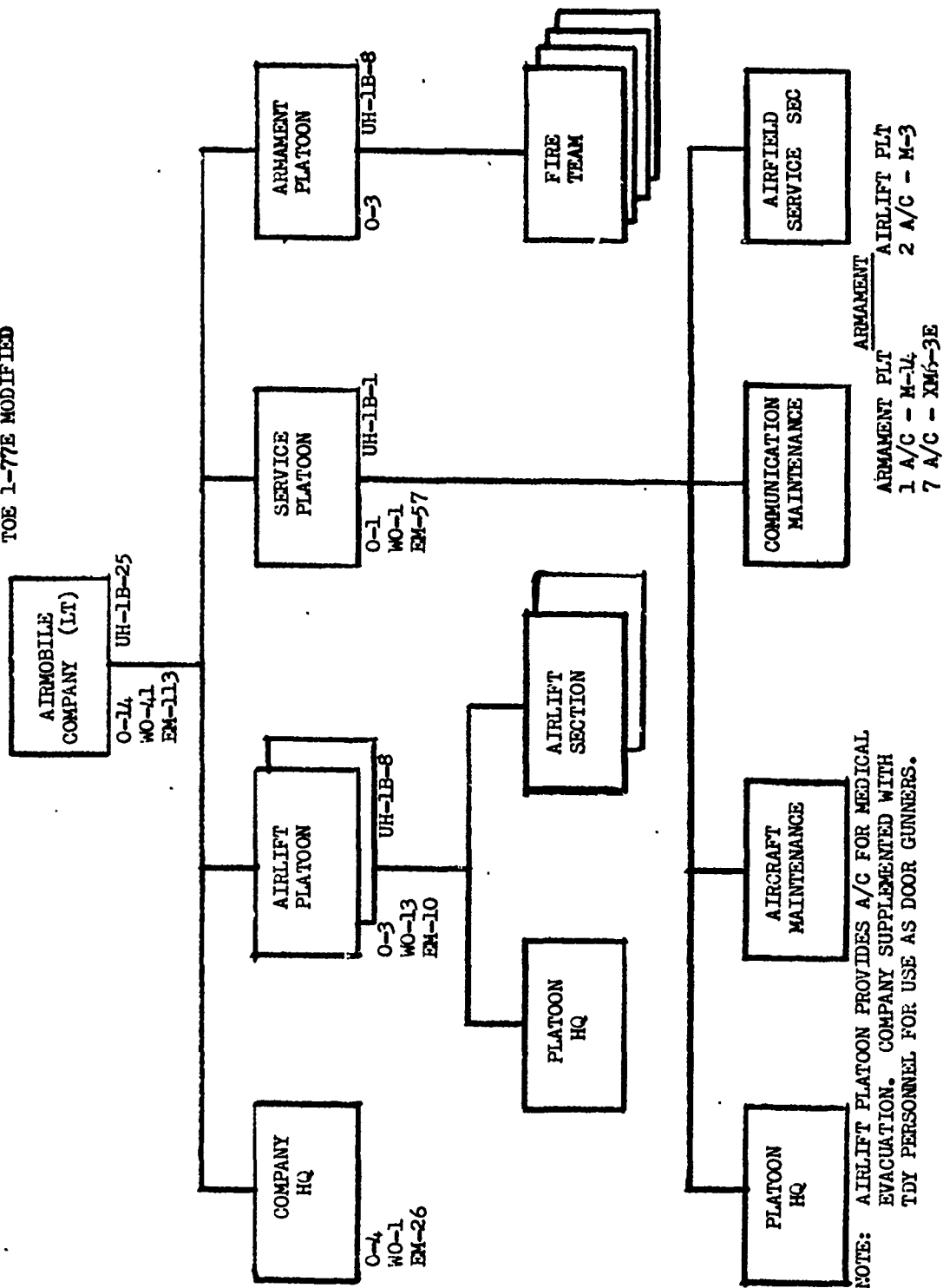
The 22d Division G2's analysis of available intelligence information indicated a relaxation of main force activities to

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(U) FIGURE C-3. 52d Aviation Battalion organization.

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(U) FIGURE C-4. 117th Aviation Company organization.

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facilitate regroupment and resupply. Stepped up local force and guerilla activities were expected in support of the main forces rehabilitation activities.

Viet Cong activity was generally confined to challenging the authority of GVN in the villages and hamlets, terrorizing the local population and forcing them to assist in resupply efforts, and interdicting routes of communication and supply. The principal routes involved were highway 1 running north and south, highway 19 running east and west, and the north-south railroad.

2. DISCUSSION

a. Command and Staff Planning Procedures

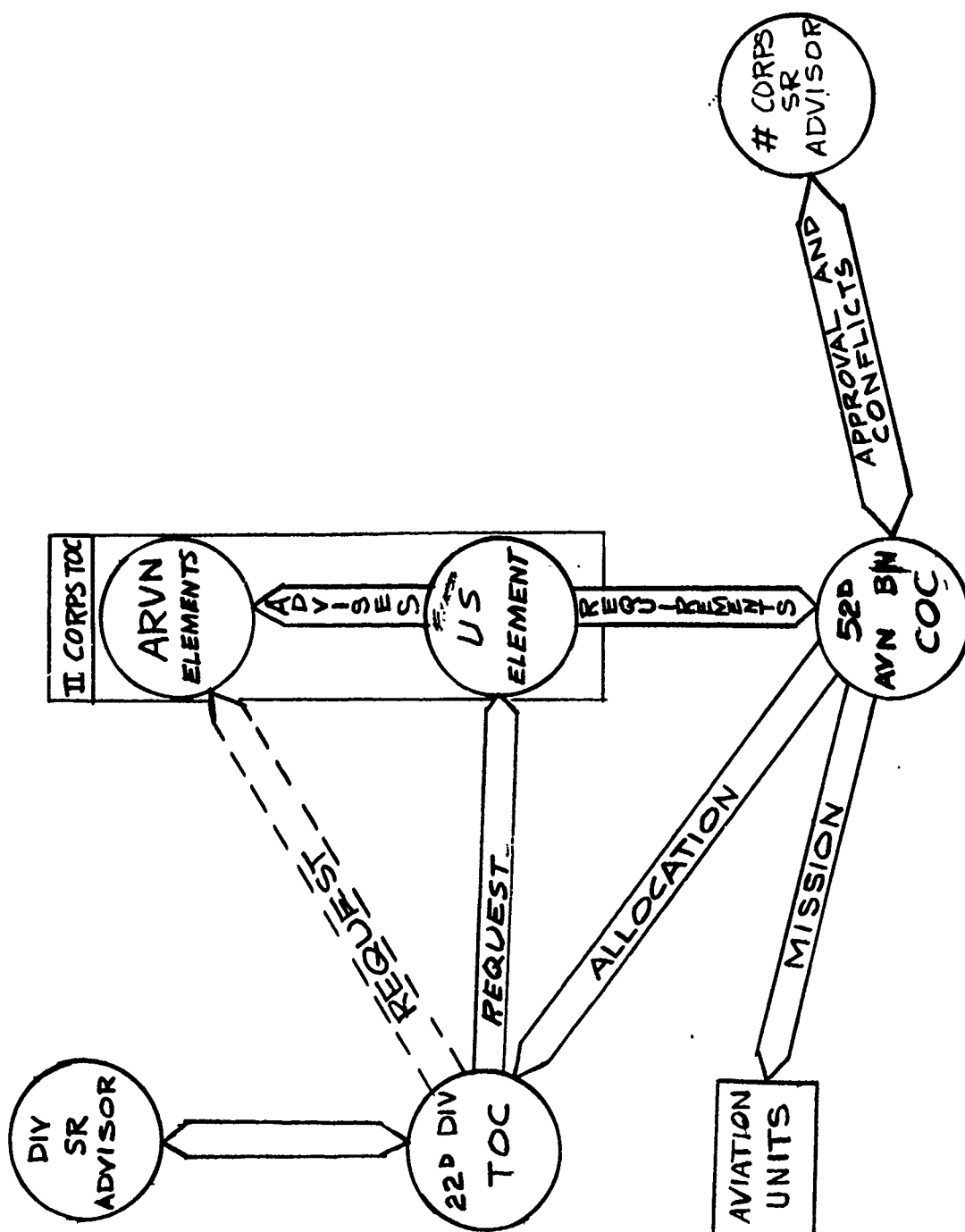
During the evaluation, the mission of the 22d ARVN Division was to obtain and maintain control of highways 1 and 19. In order to accomplish this mission, airmobile operations were planned and conducted to seek out and destroy the enemy, to keep the enemy on the move to prevent him from concentrating his forces, to obtain information through raid-type operations, and to relieve pressure on an area that was dominated by the enemy. Reports of VC locations, movements, or activities initiated the planning of airmobile operation by the 22d Division staff.

United States advisors were active in all of the planning phases but were most dominant in the planning of aviation and close air support since these were controlled by US commanders.

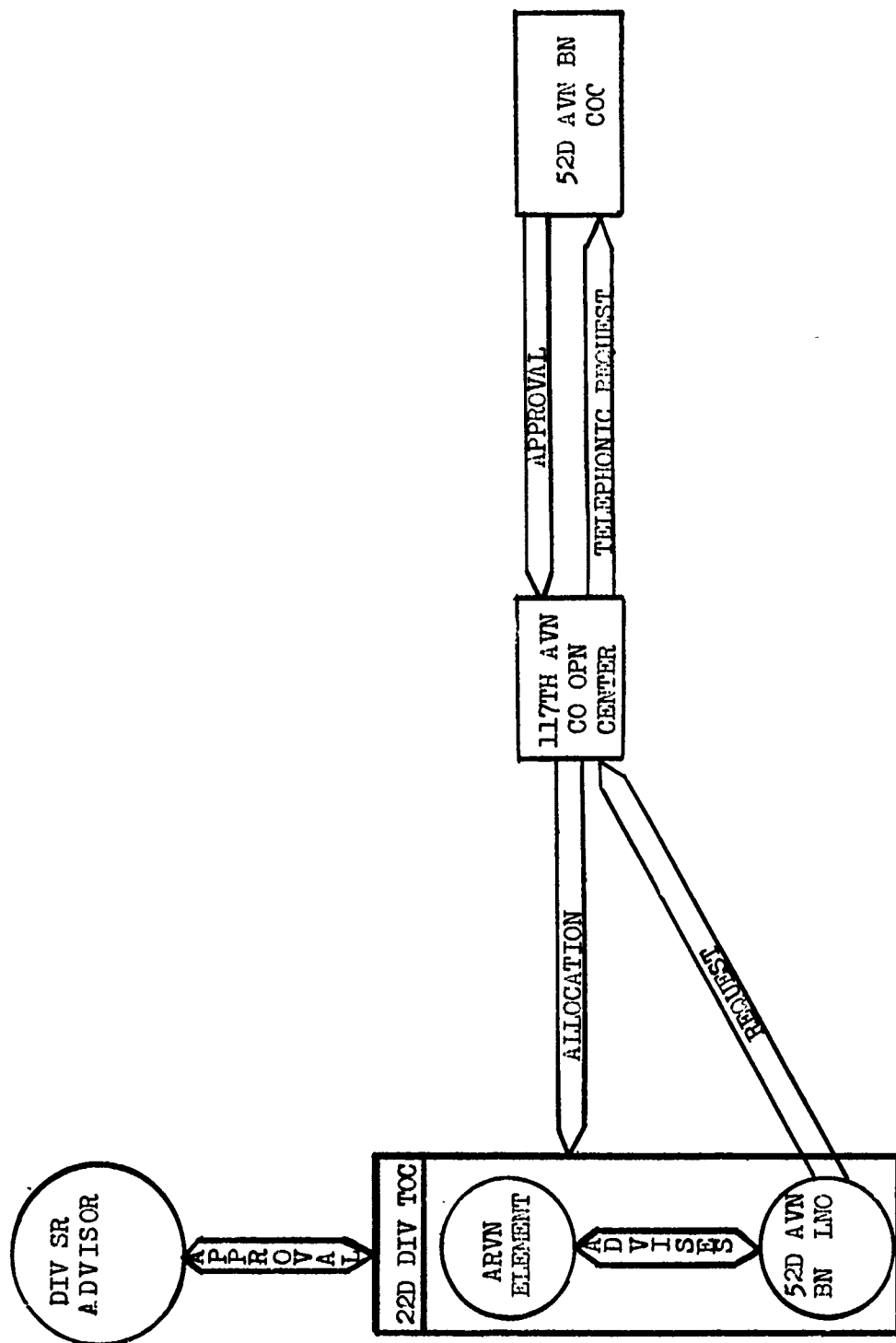
The helicopter request channels for 22d Division operations are shown in figures C-5 and C-6. Figure C-5 depicts the request channel for battalion-size operations and figure C-6 the request channel for eagle flights. Request procedures for battalion-size operations were as follows:

- 1) The division tactical operation center (DTOC) established the need for helicopters based on the division commander's concept of operation and number of troops he desired to be carried in each lift.
- 2) The division senior advisor, upon concurring in the planned use of helicopters, directed the G3 advisor to submit a formal request via US channels to the US officer on duty at II Corps tactical operations center (CTOC). The ARVN G3 air submitted a parallel request through ARVN channels.
- 3) United States advisory personnel with CTOC consolidated requests from throughout the corps area and determined priorities.
- 4) A US officer on duty with CTOC passed the helicopter support requirements to the 52d Aviation Battalion combat operations center (COC).

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(U) FIGURE C-5. Helicopter request channels for battalion-size operations.



(U) FIGURE C-6. Helicopter request channels for eagle flights.

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- 5) The aviation battalion COC assigned support requirements to its subordinate units based on the number of helicopters available and II Corps priorities.
- 6) The DTOC was notified of the allocation of helicopters by the COC.

The division G3 advisor or his assistant notified DTOC of any anticipated battalion airmobile operation prior to submission of the formal helicopter request. The 52d Aviation Battalion liaison officer with 22d Division headquarters alerted his battalion COC of the proposed operations. The 52d Aviation Battalion normally required a minimum of 72 hours notification prior to a battalion-size airmobile operation.

Eagle flight request procedures were as follows:

- 1) The need for helicopter support for an eagle flight was established when the division C/S approved the planned eagle operation.
- 2) The 52d Aviation Battalion liaison officer informed the operations center, 117th Aviation Company at Qui Nhon of the planned operation.
- 3) The 117th Aviation Company operations center submitted a telephonic request to 52d Aviation Battalion COC for permission to commit helicopters in support of the planned eagle operation. If other commitments did not interfere, the request was approved.
- 4) The 117th Aviation Company operations officer notified the 52d Aviation Battalion liaison officer at the DTOC of the approved request.

The 117th Aviation Company normally required notification of an eagle flight operation a minimum of 24 hours prior to the operation.

The 22d Division employed airmobile forces in conjunction with ground maneuver forces in the search and clear operations observed, with the airmobile force participating in the overall ground maneuver plan after landing.

The division did not normally prepare detailed loading, air movement, or landing plans for airmobile operations. None were prepared for the operations observed but the airmobile operations were conducted smoothly because the training and experience of the troops were good.

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b. Organization for Combat

The 22d Division commander conducted airmobile operations based on analysis of intelligence information on enemy concentrations and activities. The division forces were tailored to fit tactical requirements as much as possible, depending on the availability of troop units and artillery for employment. Committed ARVN units always had at least a planned three to one personnel advantage over known enemy forces as well as greatly superior supporting fires. An ARVN battalion was employed as the airmobile force in each of the operations described.

All battalions of the 41st Infantry and the airborne and Marine task forces were trained, and had participated in, several airmobile operations. Consequently, selection of the battalion to be heli-lifted on an operation was generally made on a rotational basis insofar as possible.

The 401st and 405th Scout Companies and the 22d Reconnaissance Company, trained to conduct eagle force operations, provided the personnel to make up eagle forces. For each eagle force operation, 33 individuals were selected from one of these three companies and divided into fire assault teams and a control team. Two of the assault teams were designated as flank teams and consisted of five ARVN soldiers and one US enlisted advisor. The three remaining assault teams consisted of six ARVN soldiers each. The control team was composed of one US officer advisor, one ARVN officer and four ARVN enlisted men.

c. Command and Control

The 22d Division commander had command over all ARVN units during battalion-size airmobile operations in the 22d DTA. An overall ground commander in the objective area was not appointed. A small tactical CP was located at the staging field during each of the three battalion airmobile operations evaluated. An airborne CP was also used on each of the three operations but both the tactical CP and the C&C helicopter remained in operation only until the airlifted elements were introduced into the operational area. Upon closing the tactical and airborne CP's, coordinating instructions and orders were issued from the division headquarters located at Phu Cat.

Eagle operations were commanded by the ARVN eagle force leader only to the extent that he had the authority to make final decisions on matters pertaining to the eagle forces.

Control during battalion-size operations was accomplished by selecting predesignated objectives and establishing time phases. Each of the ground elements would move to an objective, remain for a designated period, and then move to another objective. A common radio frequency was provided for each operation which the ground elements monitored and by which they passed information to the division staff.

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The airmobile phase of these operations was US directed and controlled. The 52d Aviation Battalion CO was responsible for transportation of the airmobile force to and from the proper LZ at the proper time and for providing protection for the transport helicopters while in flight. The corps air support operation center (ASOC) had operational control of the close air support elements but control was actually under the direction of an airborne forward air controller (FAC).

Eagle operations were controlled by the US advisor who accompanied the ground assault forces. The same US officer advisor went on all the 22d Division eagle operations although the ARVN officer was rotated for each operation. The division commander concurred in the control of the eagle operations by the US advisor since the experience of the advisor allowed him to effectively control the eagle forces.

The principal radios used for command and control in the 22d Division were AN/GRC-87's, TRC-1's, PRC-9's, and PRC-10's. The radios were used effectively to call for fire support but were not used to any large extent for command since no strong enemy resistance was met which required deviation from the original plans.

d. Tactics, Techniques, and Procedures

(1) Loading

Loading of aircraft in the 22d Division caused no problems during the evaluation since all troops employed had received previous training in airmobile operations.

The 52d Aviation Battalion published a parking diagram but no written loading plans or manifests were ever published. Loading was accomplished by individual unit SOP's.

Each transport helicopter carried a maximum of five or six men depending upon the weight of fuel on board and the altitude of the operational terrain.

(2) Air Movement

The area between the departure airfield and the objective was always considered to be under VC control.

Routes were always selected to avoid known or suspected VC anti-aircraft positions and to provide a minimum of flight time. Alternate routes were planned to compensate for adverse wind conditions and unexpected tactical developments.

An enroute altitude of 3000 feet above the terrain was flown to avoid hostile ground fire. Enroute airspeed was normally 50 knots. A vee was the normal formation used during battalion-size operations in the 22d Division.

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In order to reduce the flight hazards associated with different types of aircraft operating in the same area, flight levels were assigned each element according to its mission.

(3) Landing

In all battalion-size operations, helicopters normally landed in vees-of-five, five aircraft per touchdown. On eagle flights a staggered trail was used (figure C-7).

Because of the mountainous terrain and dense foliage in which the VC operated in the 22d Division area, suitable LZ's were not always available near assigned objectives. Landing zones had to be selected with extreme caution in order to obtain reasonable tactical security and flight safety.

(4) Tactics of the committed forces

The mission assigned to airmobile forces during the evaluation, with the exception of eagle flights, was to search and clear an assigned area of VC. Eagle flights were used by the 22d Division for intelligence gathering and raid missions.

A US Army or Marine advisor equipped with an FM radio always went in with the first troop lift to assist the airmobile force in directing close air support and to relay information on ground conditions to the FAC. The US advisor to the ground commander of the airmobile force acted as a tactical advisor and was also responsible for all ground-to-air coordination with US helicopters and close air support.

The normal tactic of the ARVN troops upon leaving the helicopters was for the first elements to establish a defensive perimeter and secure the LZ until all lifts had landed. After all elements had landed in the LZ, the units moved to their assigned objectives using conventional infantry tactics. During all operations, except the eagle, the airmobile force effected a linkup with another ground unit.

(5) Reserves

A reserve force was established for each battalion-size operation, kept on ground alert at the staging area, and remained there during the airlift phase of the operation and for an additional period of 2 hours. Both the reserve and the helicopters designated to lift the reserve returned to their respective home bases at the end of the 2-hour period.

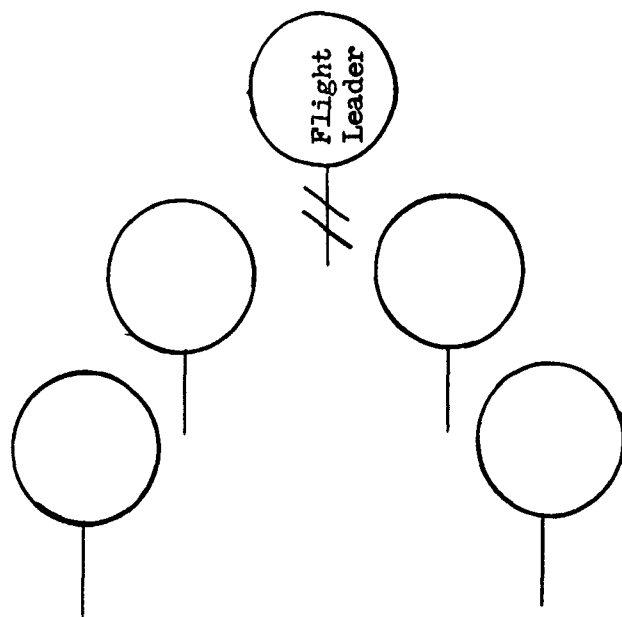
e. Fire Support Means and Procedures

(1) Artillery

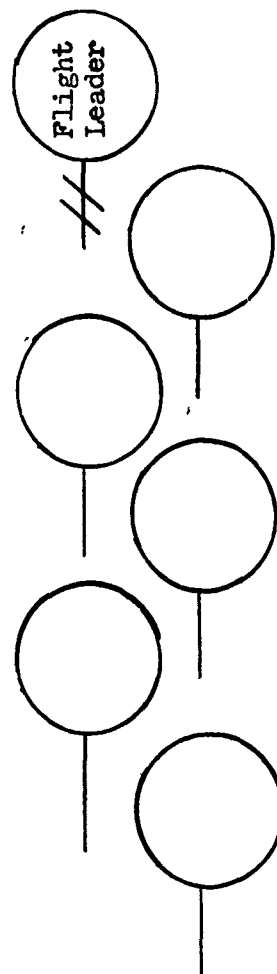
The mission of artillery during battalion-size airmobile

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Vees-of-Five In Trail



Staggered Trail



Direction of Flight

(U) FIGURE C-7. Landing formations.

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operations within the 22d Division was to provide direct and general fire support to the employed ground forces before and after the air assault force had been lifted into the objective area. Normally, one platoon of two 155mm howitzers provided general support from static locations and 2- to 3-gun platoons of 105mm howitzers were displaced from their static locations to furnish direct support.

Difficulties always arose when artillery units were required to displace. Roads were often cut and mined and bridges were out along the available routes of march. Daylight displacement was necessary to lessen the threat of enemy attack, thereby compromising the element of surprise in the objective area. A sizable force was usually required to furnish security during displacement.

Prior to a battalion-size airmobile operation a fire support plan was prepared and submitted to the division commander for approval. The plan consisted of an overlay indicating the location of units on D-day, the landing zone for the air assault force, division objective, and the axis of advance infantry units.

Two forward observers from direct support artillery units were provided to each infantry battalion. One of the forward observers attached to the air assault battalion always went into the LZ with the first element of transport helicopters. The forward observers, using FM radios, transmitted fire missions at the request of their supported unit. Fire missions went directly to the fire direction center in operation at each artillery platoon location. An aerial observer was usually aboard the USAF forward air controller O-1E and was available during daylight hours to adjust artillery from the air.

Registration was directed only once when an artillery element moved into a position from which a previous registration had not been made. On all other occasions firing was based on old firing data compiled from similar types of units that had occupied the positions previously.

For eagle flights, artillery support was never planned when the objective area was outside the maximum range of division artillery units in their static locations. When the objective area was within the range of static artillery positions, harassing and interdiction fires were sometimes used before and after the flight.

Ammunition available in support of these operations was HE and WP with a variety of fuze actions which included fuze quick or delay, fuze time, and fuze controlled variable time.

Four hundred to seven hundred rounds of artillery were expended during each battalion-size operation. In April 1965 the division fired 24 rounds of CVT fuze, in May 41, and in June 41. Artillery was employed in the objective area only after all airmobile forces had been landed and after the aviation units had been released from supporting the air assault phase of the operation.

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(2) Armed Helicopters

The 52d Aviation Battalion, which had operational control of the 117th and 119th Aviation Companies, provided general support in the RVN II Corps area. These companies, equipped with UH-1B helicopters, provided armed helicopter support for all battalion-size airmobile operations conducted by the 22d Division. Similarly, the 117th Aviation Company always provided armed helicopter support for eagle flights conducted by the division.

Depending upon the availability of aircraft, each company employed a platoon of eight armed helicopters in support of battalion-size airmobile operations. Normally, the armed helicopter platoon for battalion-size operations consisted of seven UH-1B's armed with the M6 armament system and one armed with the XM-3 rocket system. However, each company employed one UH-1B equipped with the M-14 armament system (two caliber .50 machineguns) when heavy anti-aircraft fire was expected. On eagle flights it was standard procedure to employ four helicopters with the M6 armament system and four with the XM-3 system.

The 52d Aviation Battalion had established standing operating procedures for the support of airmobile forces in the RVN II Corps. These procedures were followed, for the most part, during all combat operations. Any unit planning a battalion-size airmobile operation was required to submit a request for helicopter support to II Corps Headquarters at least 72 hours in advance of D-day. After a request was approved, two to four armed helicopters provided escort for the command and control element during reconnaissance for a suitable LZ in the objective area. Upon reaching the objective area, the C&C helicopter made passes as low as 2 to 5 feet over possible landing sites while the armed helicopters provided continuous cover from above. Prior to operations, this procedure was repeated several times, after selection of an LZ in the objective area, thereby revealing intentions to conduct airmobile operations in the area.

Once the operation was underway, three to four armed helicopters flew along the flanks to provide security enroute to a staging airfield and provide surveillance around the airfield until the transports were safely on the ground.

Enroute to the LZ, the armed helicopter again assumed the mission of providing flank security for the transport formation. Just prior to initiating the final approach to the LZ, the armed helicopters moved to the front of the transports. On final approach, all armed helicopters formed an inverted wedge formation with 1 to 2 XM-3 equipped helicopters in the center. They moved approximately 500 yards ahead at 70 to 80 knots as the transports approached at 60 knots. When approximately 1000 yards from the objective area, the armed helicopters began firing their rockets and machineguns simultaneously on and in the immediate vicinity of the LZ. Door gunners maintained a continuous stream

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of fire into suspected areas around the LZ. The XM-3 equipped aircraft continued the approach to an altitude of 100 to 200 feet, expended all its rockets on the initial assault, then climbed out to orbit 3 to 4 miles away from the LZ and waited to rejoin the company on its return to the staging airfield.

At a distance of some 600 yards from the LZ, after the lead helicopter on each side of the wedge broke formation to the right and left, the remaining helicopters followed at 10 to 15 second intervals. The second aircraft turned into position and began firing when the first aircraft turned to orbit the flank, which gave a "daisy chain" effect. In this manner they furnished continuous suppressive fire during approach, landing, and takeoff in the LZ.

Normally, the 22d Division had to submit a request to II Corps at least 24 hours in advance in order to receive airborne support for an eagle flight. After the request was approved, the armed helicopters began an eagle force operation by providing escort protection to the transports during the movement from the base airfield to the staging airfield. The gun platoon leader, aviation mission leader, and US ground advisor held a brief conference to review operating procedures and conduct a quick map reconnaissance of the objective area. Immediately thereafter, the gun platoon leader and aviation mission leader departed in separate aircraft to make an air reconnaissance and select the LZ. By prearrangement, the transports departed for the LZ 8 minutes later and were provided escort by the four remaining armed helicopters.

The gun platoon leader and the aviation mission leader rejoined the eagle flight approximately 3 miles to the southwest of the LZ. After the two aircraft had rejoined the flight, the armed helicopters moved ahead of the transports in an inverted wedge formation with the XM-3 helicopter in the center. As the transports began the final approach to the LZ, the armed helicopters moved 500 to 1000 yards ahead and began delivering suppressive fire on the LZ and in the objective area. At a distance of approximately 600 yards from the LZ the lead helicopter on each side of the wedge broke formation to the right and left, followed at 10- to 15-second intervals by the remaining armed helicopters. They initiated a steep, tight turn to reform on the flanks of the transports and maintained suppressive fire in the LZ as the transports landed and climbed away. Once the transports had moved out of the objective area, the armed helicopters began reconnoitering for the committed ground force. They flew irregular patterns at 200 to 1000 feet to present as elusive a target as possible.

When it was time for extraction from the LZ, the gun platoon leader notified the ground force leader by FM radio. The transports returned to the area and the armed helicopters reformed to provide protection along the flanks during the approach. Suppressive fire was placed on suspected areas during the takeoff.

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Employment of armed helicopters was not hindered by the wide variation of terrain features in the 22d Division area.

Staging and landing zones used ranged from 20 to 200 feet above sea level, except on one occasion when the staging field was at 1400 feet. However, the airmobile operation was conducted during the morning hours when density-altitude was low, which permitted the armed helicopters to operate at maximum gross weight.

(3) Close Air Support

All three airmobile operations employed interdiction strikes, LZ pre-strikes, air cover, and close air support from USAF fighter-bombers, which included B-57's, F-100's, A-1E's, and four US Marine F-4B's. On the only eagle flight conducted during the evaluation, the flight leader did not request close air support of any sort, not even a standby ground alert force of strike aircraft.

Jet aircraft were used primarily in the pre-strike role, striking in the vicinity of LZ's before and during the airmobile landings.

Four functions were performed by A-1E aircraft. They conducted interdiction strikes, made pre-strikes around LZ's, flew air cover over ground troops, and provided close air support for the same troops. They were used primarily for air cover and close air support because of their long on-station time, ability to strike under low ceilings, considerable accuracy due to comparatively slow dive speeds and low armament release altitudes, and proximity to the operational area.

Eight A-1E's were stationed at Qui Nhon, close to the airmobile operations and the eagle flight conducted in the 22d Division. Quyet Thang 140 occurred farthest from Qui Nhon, 55 miles away, or 22 minutes flying time. Both phases of the Quyet Thang 141 operation and the eagle flight averaged 25 miles, or 10 minutes flying time distance from Qui Nhon. The next closest base, containing A-1H aircraft (VNAF single seat version of the A-1E), was Nha Trang, 120 miles or 48 minutes from the general operational area. At Da Nang, 18 minutes away, were based F-100's and F-4B's, but they were not readily available because of other commitments. Larger B-57's were based at Bien Hoa, 225 miles to the south and 35 minutes flying time away. The location of the A-1E's at Qui Nhon made them particularly responsive to requests originating within the 22d Division area of responsibility. However, the A-1E's were allocated to Corps ASOC to support any corps operation desired by TOC and were used as such when needed.

Although continuous air cover was provided during all airmobile operations except the eagle, it was not necessary to conduct continuous airstrikes after the ground forces landed. However, had it been necessary to make repeated strikes, two flights of four A-1E's could have alternated on station over the target area so that each

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flight would have been able to strike on the average of every 30 to 35 minutes. If more frequent strikes were needed, corps ASOC could have employed the A-1H's from Nha Trang, staging them out of Qui Nhon.

All strike and FAC aircraft used in the airmobile operations were USAF. Vietnamese Air Force FAC's were carried in the USAF FAC aircraft to coordinate instructions from the Vietnamese ground forces requesting air strikes.

Landing zone pre-strikes were of two types. The first had fighters striking ground targets from 30 minutes to 1 minute before LZ time, when the FAC directed that they break off the attack. Armed helicopters, preceeding the transport helicopters, then laid down suppressive fire with 2.75-inch rockets and 7.62mm machineguns as the transport helicopters moved in. The second type of pre-strike had the fighters begin their attacks 30 minutes before LZ time and continue through all or part of the landings. All pre-strike aircraft were backed up by a cover of four A-1E's.

In Quyet Thang 141, phase I, 8 B-57's and 28 F-100's struck for 1 hour and 35 minutes, beginning 30 minutes before LZ time and continuing until over 500 troops had been landed. During the landing of one lift the FAC had F-100's dropping 750-pound napalm bombs 200 to 300 meters from the landing helicopters (figure C-8) and 750-pound GP bombs about 500 meters and beyond from the LZ. At the same time armed helicopters were laying down suppressive fire between the landing helicopters and the 200 meter line.

No helicopters were damaged from ground fire during the airmobile operations observed. Quyet Thang 141, phase I, illustrated the precise coordination and effective control possible between the FAC, the armed helicopter pilots, and the strike pilots when providing close-in fire support during the most critical phase of the airmobile operation.

The ground commanders may have placed too much emphasis on having interdiction strikes around LZ's and on ground force objectives 1 and 2 days prior to the actual operation and by so doing, may have lost some of the element of surprise by alerting the VC to the possibility of an operation in the area. The amount of fire power provided immediately before, during, and after the landings appeared sufficient to neutralize or destroy any probable VC capability.

The maximum A-1E ordnance loads were limited to 4500 pounds as compared with 6000 pounds in the delta region, because the short runway at Qui Nhon would not permit safe takeoffs with the higher aircraft weights. Aircraft could stay over the target area from 2 to 3 hours, depending on whether or not external fuel was carried. The A-1E's flew in flights of four airplanes, with two carrying all bombs,

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(U) FIGURE C-8. Napalm bombing.

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and two all napalm. Bomb loads included 750-, 500-, and 250-pound general purpose bombs, 260-pound fragmentation bombs, and 120-pound fragmentation bomb clusters. Napalm bombs weighed 750 and 500 pounds. Each A-1E was armed with four 20mm guns and carried a total of 800 rounds.

The bulk of the jet support was provided by F-100's which carried a maximum of 3000 pounds in addition to the weight of external fuel tanks. The ordnance carried included 750- and 500-pound general purpose and napalm bombs, and CBU pods which dispensed small fragmentation bomblets from very low altitudes. Each F-100 also carried four 20mm guns and 800 rounds.

The A-1E's were dispatched to II Corps in February 1965 to be used as necessary in defense of the corps area, particularly Binh Dinh Province. Although the A-1E aircraft were in effect assigned to corps ASOC to be used as necessary, the aircraft had to be formally requested each day from the Air Operating Center (AOC) at Saigon, since that unit allocated aircraft to all corps. The Air Operating Center could re-allocate the eight A-1E's at Qui Nhon to other corps areas if enemy activity there required more strike aircraft and they did so on a few occasions during the evaluation when the level of VC operations in II Corps did not require the presence of strike aircraft for periods of 1 or 2 days.

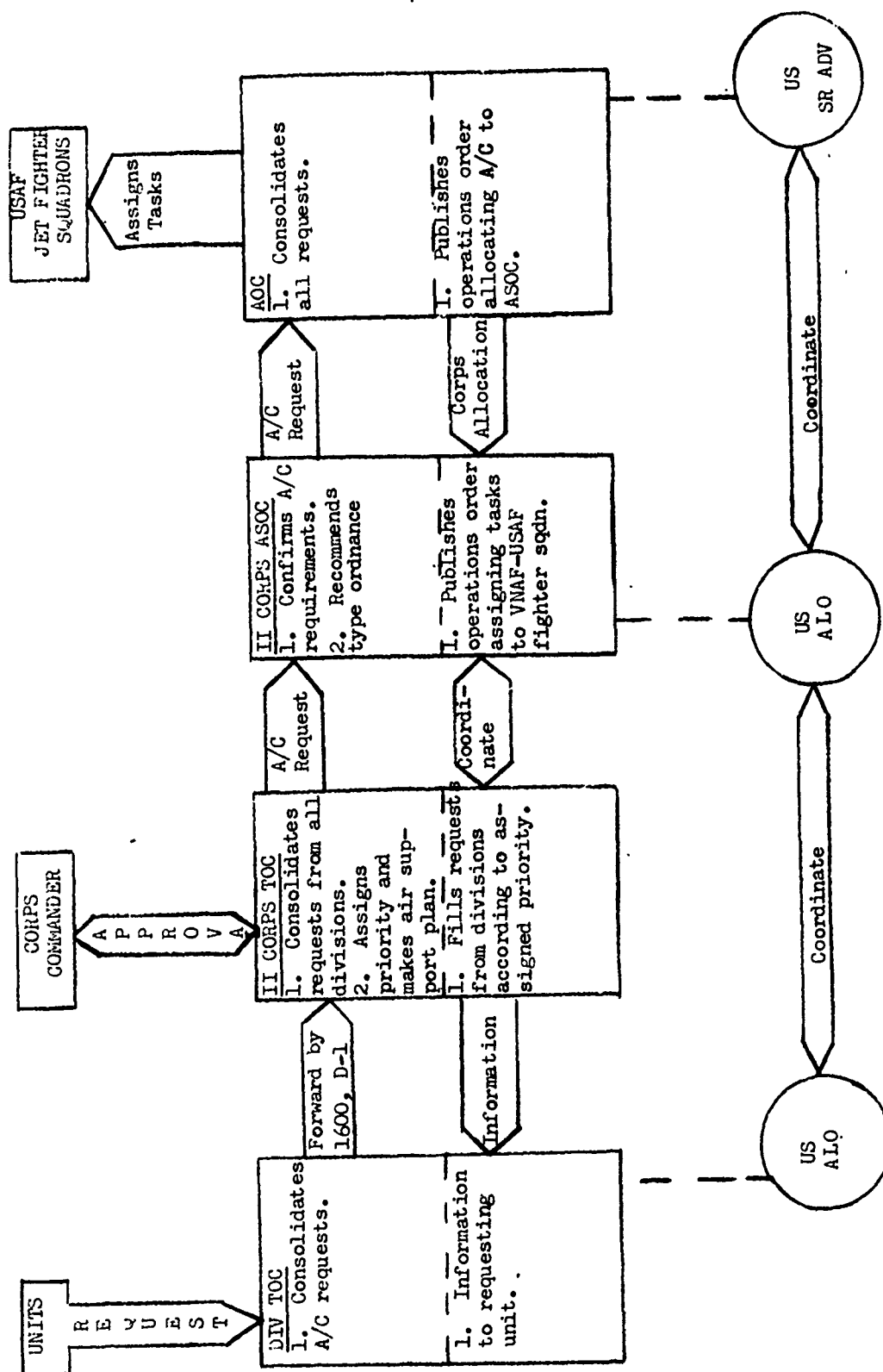
Division air support requests were of two types, pre-planned and immediate. Pre-planned request channels are shown in figure C-9. Pre-strike requests were normally submitted through the division G3 air to II Corps TOC no later than 1600 hours the day before the air support was desired. Within Corps TOC the requests were consolidated, priorities assigned, and the close air support plan submitted to the corps commander for approval. Approved close air support requests were passed to the adjoining ASOC. Then ASOC forwarded the requests to AOC, where aircraft were allocated to each corps ASOC.

Immediate request for air strikes during the airmobile operations were simple and direct, since FAC and fighter aircraft were overhead for all but the last part of the last operation and then they still maintained ground alert in support of the operation. When air cover was overhead, the ground commanders called the FAC, who then called in the fighters. When fighters were not overhead, the FAC, who was airborne continuously, would relay the ground commanders' requests to ASOC which would then scramble the fighters from Qui Nhon.

f. Logistical Support

Most logistical support procedures for airmobile operation in the 22d DTA had been standardized. The S4 of the 52d Aviation Battalion was responsible for supplying all the Army aircraft used in battalion-sized operations out of staging areas. Supplies of fuel and ammunition

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(U) FIGURE C-9. Pre-planned air request channels.

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were pre-stocked at each of the staging airfields used in these operations. On one battalion operation the home base of the 117th Aviation Company was used as the staging area and the 117th Aviation Company was responsible for providing the necessary ammunition and fuel.

Refueling of the helicopters at the staging areas was accomplished by means of M49 fuel tankers and 2½-ton trucks with two 500-gallon collapsible tanks. Trucks with mixed loads of 2.75-inch rockets and 7.62mm machinegun ammunition were located at the staging field. Refueling and rearming of an armed platoon took approximately 45 minutes.

On eagle flights, the home base of the 117th Aviation Company at Qui Nhon was used and the company was responsible for providing its own supplies.

Vietnamese units involved in an airmobile operation brought their ammunition and rations with them from their home station. The class I and class III supplies designated for resupply were left at the staging airfield for delivery by helicopter as needed.

All medical evacuation on these operations was to be made by helicopter. The medical evacuation helicopter accompanied the other helicopters into the operational area, remained there until the airlift portion of the operation was over, and then returned to the staging field and remained on call until released by the aviation battalion commander. Pickups were made at the direction of the aviation battalion commander. The air ambulance was always escorted into and out of a pickup point by one or more armed helicopters. A battalion aid station was set up at each staging area.

A maintenance unit was located at each staging area with a CH-37 helicopter to be used as a recovery ship. Mechanics were available to perform minor repairs. An eagle force was also on standby to be used in securing downed helicopters if needed.

Logistical agencies involved were capable of supporting pre-positioning of stocks of fuel and ammunition at the staging airfield and well-established logistical procedures adequately supported the requirement to re-fuel and re-arm the helicopters, re-supply the ARVN troops with class I and III supplies, and provide medical evacuation. The use of uncooked rations made the ARVN soldiers' packs heavy and bulky and required time for preparation of meals in the field.

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(C) ANNEX D

21ST DIVISION AIRMOBILE OPERATIONS

(SUMMER MONSOON SEASON)

1. INTRODUCTION

This annex describes airmobile operations conducted by the 21st ARVN Infantry Division in the 42d division tactical area (42d DTA) from 14 June through 2 July 1965. Evaluators from ACTIV revisited the 42d DTA to observe effects of the summer monsoon on airmobile operations of a division that had been observed during the dry season.

a. Physical Environment

(1) Terrain

The summer monsoon started in the 42d DTA during late May. By 14 June rice fields were covered with water varying in depth from less than 2 inches to more than 4 feet and the Mekong Delta was largely inundated.

(2) Climate and Weather

The summer monsoon season is characterized by heavy and frequent rains, high humidity, and tropical temperatures and 1965 was no exception. During the early hours of the morning, clouds began forming and by 1000 hours the ceiling was usually down to approximately 2500 feet. Winds were generally from the southwest, varying from 10 to 25 knots. The humidity, together with high temperatures, caused some physical discomfort and the heavy rains and low cloud ceiling produced flight hazards because of reduced visibility and heavy turbulence.

b. Military Elements

(1) ARVN Units

The 1st and 3d Battalions of the 33d Infantry and the 2d Battalion of the 31st Infantry were relieved of territorial defense responsibility in March and April and were trained extensively in airmobile procedures and normally were made available to be used as heli-lifted forces on airmobile operations. The 44th Ranger Battalion moved to Can Tho from Bac Lieu to become a part of the corps reserve prior to the 14th of June but remained available to the 21st Division as a reserve unit for airmobile operations.

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(2) US Aviation Units

A considerable change took place with the aviation units between the time of the February evaluation and the June evaluation. Company A of the 101st Aviation Battalion joined the 13th Aviation Battalion to provide additional helicopter support in the delta area of Vietnam. The UH-1D helicopters brought in-country by Company A added additional lift capability to the battalion.

(3) General Insurgent Situation

There was no factual information on any change in the Viet Cong (VC) order of battle in the 42d DTA between 1 February and 14 June 1965.

2. DISCUSSION

a. Command and Staff Planning Procedures

The planning procedures for airmobile operations in June did not vary greatly from those used during the earlier evaluation. It was noted that as the division became more experienced in conducting airmobile operations, there were fewer details in the plans, the reaction time was faster, and a greater degree of flexibility was provided. It was also noted that the ARVN planners became more independent from their US counterparts when formulating the plans.

b. Organization for Combat

The organization for combat differed from that used during the earlier evaluation in that three additional battalions of the 21st Division had been trained to operate as airmobile forces. With the increased number of trained airmobile personnel and the increased lift capability of the UH-1D helicopters, a larger force was available to be airlifted into an objective area in a shorter period of time.

c. Command and Control

Changes in the use and effectiveness of the Fire Support Coordination Center (FSCC) was being perfected during the second evaluation period. A system to control and coordinate all fire support means was developed and was under the supervision of the division commander and his advisor.

d. Tactics, Techniques, and Procedures

During the second evaluation, the 21st Division conducted airmobile operations by using ground maneuver forces to sweep, block, and establish contact with the Viet Cong. Each element of the ground

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maneuver force, including elements of the River Assault Group (RAG), were assigned objectives and given routes of advance and phase lines for control. One or more airmobile assault forces were designated to be airlifted into areas that were difficult to reach by road or canal. Once the assault forces were landed, they moved to assigned objectives and in essence became a part of the ground maneuver force. A linkup of ground maneuver forces was usually accomplished. Another major element of the airmobile operation, the reserve or eagle force, was not assigned pre-designated missions but was to be committed once VC were suspected or found to be in an area. The eagle force differed from the airmobile assault force in that they constituted the reaction force, had no pre-designated objectives or phase lines, rarely made a linkup, and were extracted from an area by helicopter when their mission had been accomplished. The eagle force ranged from company to battalion size and the same unit could be used several times during one operation in different locations.

e. Air Movement

In the operations observed during this phase of the evaluation, the enroute formation were vees-in-trail. The staggered trail formation described in annex A was not used.

f. Fire Support Means and Procedures

(1) Artillery and Armed Helicopters

The artillery and armed helicopters were employed in the same manner as described in annex A, but the division was in the process of developing a system by which the artillery and armed helicopters could both be used simultaneously and in approximately the same vicinity.

(2) Close Air Support

The first two operations observed during the second evaluation period were pre-planned and employed tactical air power to pre-strike possible VC concentrations in the immediate vicinity of the LZ's. The third operation was not pre-planned and did not have a specific LZ. It used eagle forces in reaction to intelligence generated by friendly ground elements probing for VC. All three operations had continuous air cover of two VNAF A-1H's, VNAF FAC's in U-17's, and USAF/VNAF FAC's in O-1F's. In the third operation, the air cover provided a pre-strike capability to be used, if necessary, during the eagle flights.

In the previous study of the 21st Division, all strike aircraft employed were VNAF A-1H's, with the exception of two flights of USAF A-1E's used to strike ground force objectives. In the second evaluation period a variety of USAF and carrier-based USN jet and prop-driven aircraft were used in addition to VNAF A-1H's. The jets included USAF

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B-57's and F-100's.

In the early operations, as described in annex A, the predominate number of requests for air cover or ground alert were fulfilled by VNAF A-1H's. No LZ pre-strikes were requested of or conducted by the air cover. During the period presented in annex D, all the USAF and USN aircraft employed were used for LZ pre-strikes or airstrikes during the first two operations. Vietnamese A-1H's were not used for LZ pre-strikes but were the only aircraft used for top cover during all three operations. They were also used to make airstrikes during the operations.

There was a three-fold increase in the use of tactical aircraft between the first and second evaluations. For the five operations conducted in January and February, Air Support Operations Center (ASOC) allocated a total of 24 sorties to fill the ARVN air requests. In the first operation observed in the June-July evaluation period, 38 sorties were allocated, including aircraft to strike a specific area 1 and 2 days preceeding the actual operation. The second operation was also allocated 38 sorties and the third, 18. The number of sorties for all three operations totaled 84, or 3.5 times as many sorties as were allocated for the five operations studied previously.

During the first study of the 21st Division, VNAF FAC's without American FAC's aboard controlled the VNAF A-1H's. The general practice of VNAF FAC's controlling VNAF fighters and USAF FAC's controlling American fighters persisted in the second study, although such procedures were not required by regulations. Control of US jet fighters, however, was restricted to American FAC's.

During the second study, the weather at the time of each airstrike did not influence the effectiveness of the strike. Cloud ceilings and visibility were adequate for normal dive bombing and strafing patterns.

g. Effects of Weather on Airmobile Operations

Tactics, techniques, and procedures were not greatly affected by the weather during the three operations observed. The weather did, however, on occasion restrict observation during the passage of rain showers. Similarly, the hazards of thunderstorm activity caused alternate routes to be flown, which disrupted the flight time calculations. Ground movement of troops was slowed over rice fields that were flooded to a depth of more than 2 feet. If the ground troops chose to bypass the flooded areas, time was lost and the area bypassed was not searched.

These effects of weather, although potentially serious, amounted to nothing more than inconveniences during the three operations observed during the summer monsoon season.

ANNEX D

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(U) ANNEX E

SETTING OF THE EVALUATION

1. ENVIRONMENT

The Republic of Vietnam (RVN) occupies a crescent-shaped area of about 67,000 square miles on the southeastern edge of the Indochina Peninsula. Although only 45 miles wide at the 17th parallel, its demilitarized northern border with North Vietnam, it has a seacoast of 1,500 miles on the South China Sea and Gulf of Siam, and western borders with Laos and Cambodia of about 900 miles. The land borders are poorly defined and drawn through difficult and inaccessible terrain.

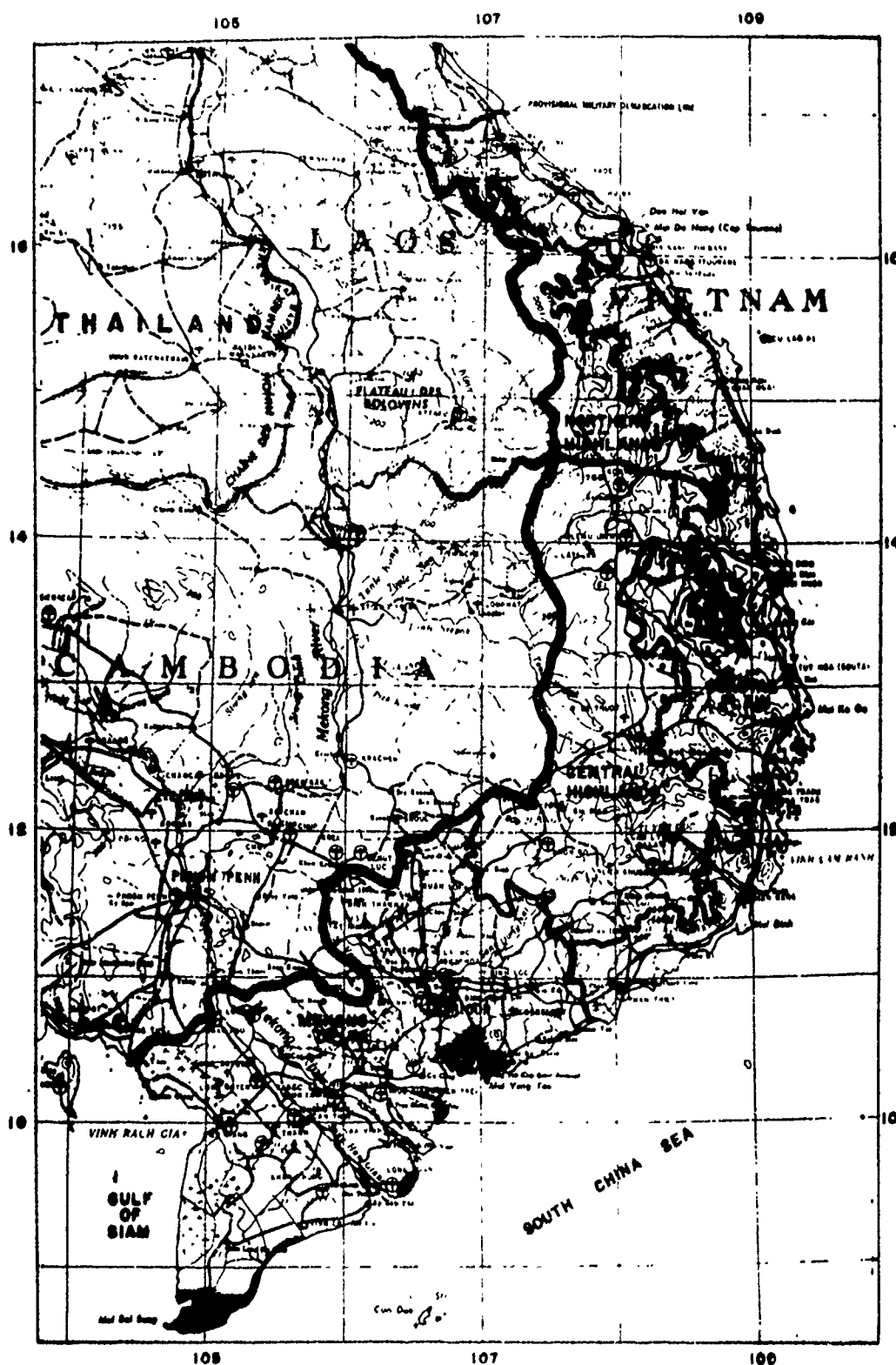
a. Terrain

There are four distinct geographical regions: The highlands located in the north and central portion, the plateaus of the central highlands, the coastal plain, and the Mekong Delta in the south. See figure E-1.

The northern two-thirds of the RVN is dominated by a chain of broken mountains and rugged hills extending in a northwest-southeast direction and terminating on the northern edge of the delta plain about 50 miles north of Saigon, the capital. The area is characterized by steep slopes, sharp crests, narrow valleys, and dense vegetation. It is sparsely populated, mainly by primitive and nomadic tribes, and it contains few roads or trails.

The central highlands adjacent to the Laos-Cambodia border contain extensive plateau areas. Here, the mountains give way to more gently rolling terrain. The northern plateau is covered by almost impenetrable tropical forests and jungles, which often have two dense overhead layers of foliage at heights of about 40 and 125 feet. The southern portion is typical savannah country, with large open expanses covered by tropical grasses and open forests. This region is more heavily populated than the northern highlands and has more roads and trails.

The coastal plain, varying from 10 to 25 miles in width, extends from the 17th parallel to the Mekong Delta. At several places mountain spurs jut out to the sea, cutting the plain into a series of compartments roughly at Mui Dinh, Mui Ke Ga, Quang Ngai, Da Nang, and Hue, north of which the spurs become more frequent. The area is characterized by sandy beaches and dunes, backed up by rice fields, fertile areas, and marshes extending to the mountains. It contains many small cities.



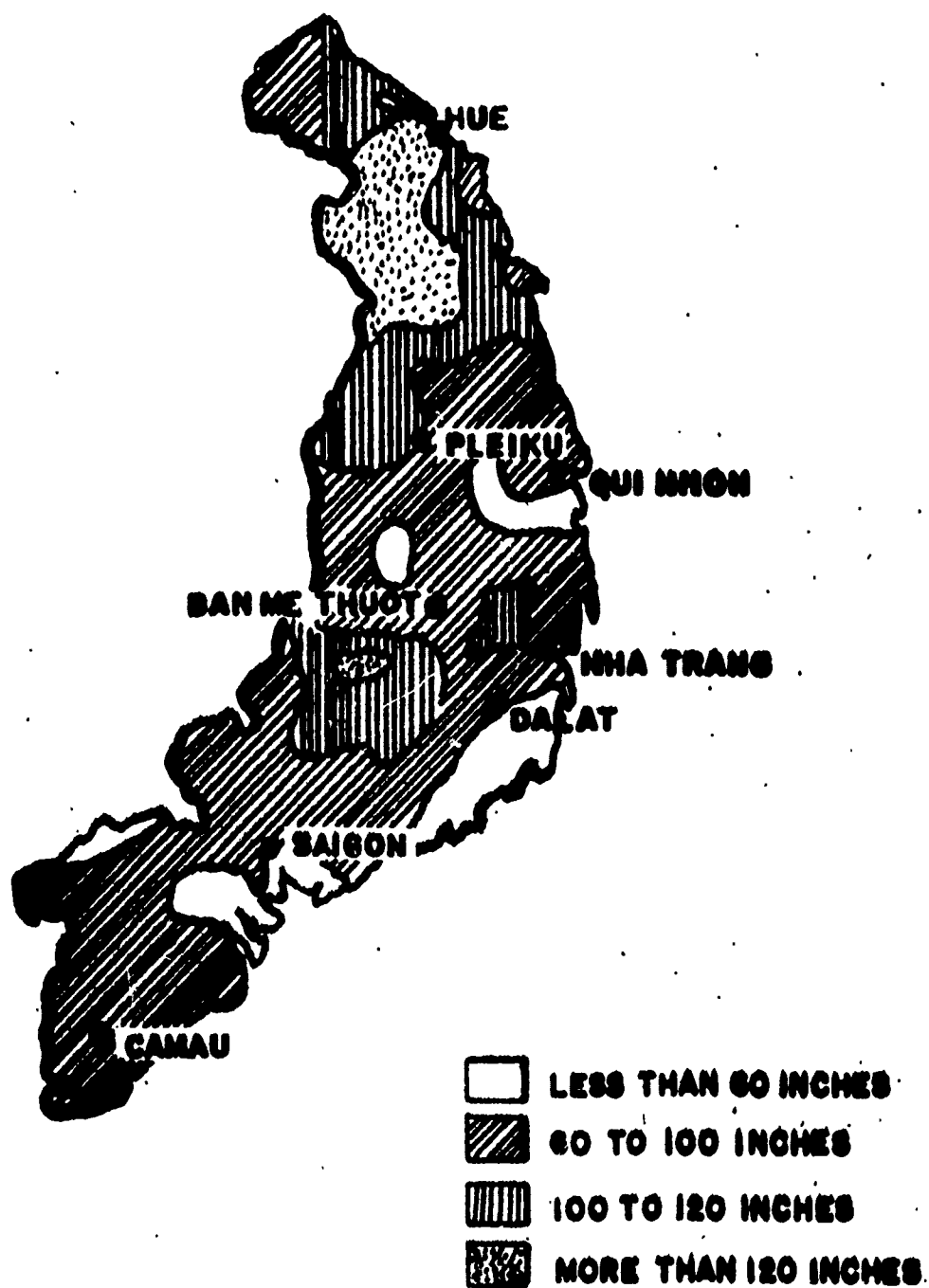
(U) FIGURE E-1. Geographical regions, RVN.

The southern third of the country is part of the large delta plain formed by the rivers Hau Giang, Mekong, Vam Co, Saigon, and Dong Nai. The Hau Giang flows directly to the South China Sea. The huge Mekong splits into four branches, and the Vam Co and Dong Nai enter the Saigon before reaching the sea. In addition to these major tributaries, the area is cut by a number of smaller streams and a dense network of canals. The plain is relatively flat with few points exceeding an elevation of 20 feet above sea level. It is a very fertile area with more than 9,000 square miles under rice cultivation. Drainage is effected chiefly by tidal action, with the difference between ebb and flood as much as ten feet in some areas. The southernmost tip of the delta, known as the Ca Mau Peninsula, is covered with dense jungles, and mangrove swamps stand at the shoreline and on river estuaries. The eastern portion of the delta plain is heavily forested. The Plain of Reeds, a large marshy area covered with tall reeds and scrub trees, is located in the center of the delta region adjacent to the Cambodian border. During the rainy season, a major portion of the entire area is completely inundated.

b. Climate and Weather

The climate is hot and humid, subtropical in the north and tropical in the south where the monthly mean temperature is about 80 degrees Fahrenheit. The annual rainfall is heavy in most regions and torrential in many. It is heaviest at Hue which has an annual average of 128 inches. The low of 28 inches at Mui Dinh, a small cape on the eastern coast some 62 miles south of Nha Trang, results from the presence of hills in the area. At Saigon, rainfall averages 80 inches annually. See figure C-2.

Seasonal alternation of monsoon winds profoundly influences the weather throughout the year, although geographical features alter patterns locally. The winter monsoon blows generally from the north-east from early November to mid-March and often brings floods to the northern portion of the RVN. This is the period of the dry season in the delta, which usually lasts from December through March. The winds begin to shift in March, and with the exception of the coastal plain, high temperature and humidity prevails in all of the RVN from April to mid-June. The summer monsoon blows generally from the southwest from mid-June to late August or early September, bringing to the delta region heavy and frequent rains, high humidity, tropical temperatures, and maximum cloudiness. Mountains cause clouds to pile up and deposit moisture before the clouds reach the coastal plain or the northern highlands, which areas are dry during this period. In September the winds begin to shift again, and the coastal plain receives its maximum amount of rain and cloud cover, including severe tropical storms and typhoons.



() FIGURE -2. Annual precipitation, RVN.

c. Communications

Roads throughout the RVN are few in number, poorly cared for, and narrow. Road travel to major areas in the north is often stopped completely when bridges and narrow places are destroyed, either by natural causes or the Viet Cong (VC). In the delta region, 2,500 miles of navigable inland waterways ease somewhat the communication burden placed on the 1,200 miles of primary and secondary roads in the region.

A single-track, narrow gauge railroad connects Saigon with the northern provinces by way of the coastal plain. The system and equipment is old and frequently damaged by the VC.

There is no wire telephone communication among the major centers of population. What radio telephone service is available is at the mercy of the often unstable atmospheric conditions over the RVN. Telephone equipment used in major cities is antiquated or makeshift.

In effect, rural areas are virtually isolated. It is not unusual for a VC act of terrorism or sabotage to take place in an outlying delta area and be reported in Saigon a week or more later. Most incidents accounted for take at least two or three days to get into the situation reports to Saigon.

d. Population

The RVN has a population of approximately 15.7 million, with an average density of 234 per square mile. The highland region is generally the least settled of the geographic areas of the RVN, and the coastal plain contains the most people. About 90 percent of the people live on the 13 percent of the land best suited for rice cultivation: the delta and the small river basins of the coastal plain.

Racially, the population is composed of 85 percent ethnic Vietnamese, 6 percent Chinese (who have established a great influence on the economy of the RVN), 5 percent Montagnard (the nomadic aboriginal tribe people living in the highlands), 3 percent Khmer-Cham (of Cambodian descent), and 1 percent European, Indian, and other small groups.

Religiously, about 80 percent profess Buddhism, about 10 percent profess Catholicism, and the rest profess Muhammeuianism, Hinduism, Protestantism, Cao Daism, or Hoa Haoism (two local sects).

Socially, there is an upper class composed of old mandarin families, landed gentry, government officials, professional men, intellectuals, clergy, and wealthy businessmen; an urban middle class of civil servants, teachers, and small businessmen; and a lower class, mainly composed of farmers, but with a growing group of urban workers. Mobility upward within the structure is possible but difficult, especially up from the lowest.

Vietnamese culture is based on traditional Chinese customs and has been profoundly influenced, especially among the upper class living in the cities, by the French. Most rural Vietnamese continue to follow the traditional way of life. The great divergence in racial, religious, social, and cultural structures has produced continued strife and tension among the people who belong to the various groups. There seems to be no evidence of a permanent stabilizing force available within the Vietnamese society to control conflicting elements.

The Vietnamese have a deep and traditional belief in destiny and man's inability to change the natural order of events. This concept, reinforced by religious beliefs, results in a high valuation of the virtues of stoicism, patience, and endurance. The Vietnamese are proud of their ethnic traditions and hold themselves superior to ethnic minorities in the RVN and to the peoples of neighboring countries.

Most of the people living in the countryside, who make up 90 percent of the population and who provide the main targets for the VC, care neither for the government in Saigon nor for the VC. They want to be left alone to grow their crops, raise their families, have a tranquil old age, and die traditionally.

2. MILITARY ELEMENTS

a. Friendly

The units, missions and tactics of units participating in this evaluation are covered in detail in annexes A through D.

b. Enemy

It is a well-documented fact that the Communist apparatus in the RVN is an extension of the Communist party of North Vietnam, and that direction and materiel and personnel support is received from the North. Supreme authority in the VC political and military organization in the RVN is the Central Office South Vietnam located in Tay Ninh Province near the Cambodian border. Subordinate thereto are four military regions and one special zone (corresponding roughly to the capital area), each of which has a subordinate series of provincial, district, and village-commune party committees.

(1) Units

The VC military forces can be divided into 3 operational categories: main force, local force (together about 35,000 troops), and militia units (60,000 to 80,000 soldiers). The main force consists of full-time units controlled by the military region. Local force units are controlled by province and district committees.

They are well-organized, and the personnel are well-trained and well-equipped. Militia units are full- and part-time local armed groups responsible to district, village, and hamlet authorities. Personnel of these units are used frequently as intelligence gathers, porters, or as reinforcements for main and local force units. They may replace losses in the local force.

A VC battalion is planned for 400 to 500 men, but in reality may consist of as few as 250. A company averages 100 men, and a platoon about 30. Personnel may be acquired voluntarily, by kidnapping, or by impressment using blackmail or threats of violence. There is evidence that large numbers (a total of about 45,000 in four years since 1960) of native-born North Vietnamese have infiltrated from North Vietnam through Laos into the RVN.

Viet Cong forces are in general lightly equipped and have a commensurate degree of cross-country mobility. In addition to individual weapons, they have a large number of automatic weapons, and light crew-served weapons. The larger units are equipped with mortars and recoilless rifles. Supplies are obtained through capture, local procurement, taxation, and infiltration. Food staples such as fish, rice, and manioc are readily available.

(2) Capabilities

Because of support rendered by the country people, familiarity with the area, lack of responsibility for life and property, and the nature of guerrilla organization, equipment, and tactics, the VC are able to move virtually at will throughout much of the RVN. They are able to exploit as necessary the differences in race, religion, class, economic condition, and cultural background of their targets. They have a well-developed intelligence system, good discipline, and a usually effective security system.

Viet Cong military operations have the advantages of speed, surprise, deception, and infiltration. Training, accomplished in small, local areas by well-indoctrinated cadre, probably emphasizes selection of the most vulnerable targets, night operations, movement as small units until concentration is required, terrorism and propaganda, use of weapons, employment of terrain and weather, and infiltration. The VC objective is not, at the present stage of their insurgency, to hold terrain, but rather to inflict losses on government forces, to capture weapons and materiel, and to convince the people that the government in Saigon cannot protect them and will eventually be defeated.

(3) Limitations

Viet Cong limitations stem from their need for strong security and the largely clandestine nature of their activities. Although the people among whom they live afford them a high degree of

protection, active and passive, force must often be used, and support based on threats and fear endures only as long as pressure is brought to bear. Primitive living conditions add to the strain of avoiding government troops until the right moment. The VC are vulnerable to air and artillery attack, and less so to armor attack. Limited logistical capability, lack of communications, and insufficient medicine are other weaknesses.

(U) ANNEX F

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